November 1960

SCHOOL MANAGEMENT

Education Library

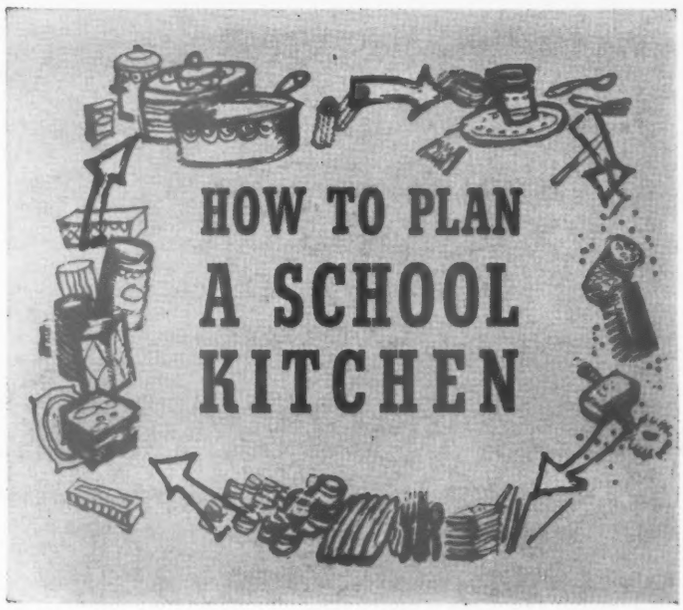
PRACTICAL SOLUTIONS TO SCHOOL MANAGEMENT PROBLEMS

The Junior High School

THE NEW CONANT REPORT
A step-by-step analysis of the just-published study

WHAT EXPERIENCED SUPERINTENDENTS WANT
A tape-recorded interview with five men who have recently built, or are building, a JHS, in which they discuss curriculum, grade organization, and physical structure

AN ARCHITECTURAL SOLUTION TO JHS BUILDING
A team of architects and consultants sketch a structure to the superintendents' specifications



HOW TO IMPROVE INSTRUCTION WITH

Teaching Teams

SEE COMPLETE CONTENTS ON PAGE 2

SCHOOL FIRE PROVES IT

HeyWoodite Won't Burn — Won't Break — Won't Stain

MARTINS FERRY PUBLIC SCHOOLS
MARTINS FERRY, OHIO

OFFICE OF THE SUPERINTENDENT

Apr. 12, 1960

PHONE ME 3-1732

The Hughes-Ogilvie Co.
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Attention: Mr. E. C. Scruggs

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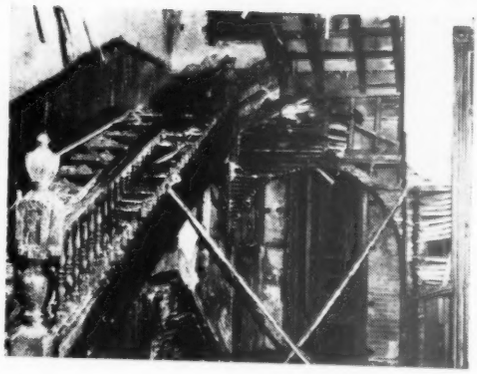
Needless to say, our Board of Education after examination of the furniture, felt that the cost of the Heywood-Wakefield furniture certainly paid off in the long run.

Sincerely yours

H. A. Meyer
Supt. of Schools

HAM/ch
Enc.



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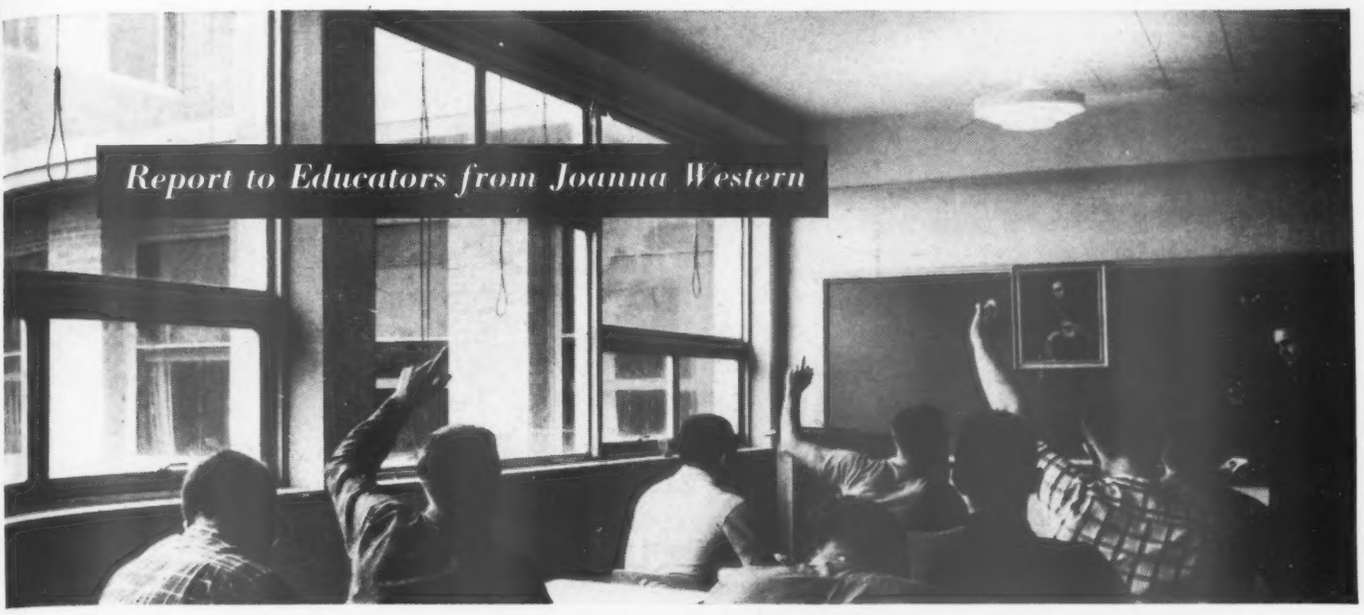

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SCHOOL MANAGEMENT

THE JUNIOR HIGH SCHOOL—A SPECIAL SM ACTION REPORT

Conant reports on the junior high school 46
SM's comprehensive coverage of the junior high begins with this summary of Dr. Conant's just-published study. Condensed here are his 14 recommendations for minimum junior high standards.

Five superintendents plan a junior high school 88
Five superintendents and a team of architects and consultants, gathered in White Plains, N. Y., give their views on how we can best meet the special needs of junior high school students.

"Middle School" for tomorrow: an architectural solution 101
Following SM's all-day junior high school conference, an architect and a consultant translated the comments into this thought-provoking design for the "successor to the junior high school."

How to improve instruction with teaching teams 50
Schoolmen in Park Forest, Ill., know that their approach to team teaching pays educational dividends. Here's how their district's high school teachers are working together to do a better job.

How to plan a school kitchen 55
You can't design one unless you know how it will be used. This step-by-step account of school kitchen planning lists the questions you should ask first—and how your answers affect design.

Is your district doing all it can with tape recordings? 58
There's more than one way to use an instructional aid, say schoolmen in Taylorville, Ill. Under a unique program, they continue to explore new uses for tapes in a variety of subject areas.

Why do our schools cost so much? 67
In Northbrook and Glenview, Ill., taxpayers support their expensive high school because they understand the need it serves. Here's a model you can use to explain the cost of your district's schools.

Editor: Paul Abramson; **Feature Editor:** Theodore C. Boytos; **Departments Editor:** Ralph M. Ferdinand; **Art Director:** Laurence Lustig; **Production Manager:** Virginia E. Ray; **Art Production Manager:** Joan Longnecker; **Copy Editor:** Harriet Robbins; **Production Assistant:** Elaine Lesta; **Associates:** Dr. Orlando F. Furno, *Educational Research;* Richard Flambert, *Food Service;* Dr. Stephen F. Roach, *School Law;* **Sales Promotion Manager:** Frederick L. Bunting; **Circulation:** James Vinisko, *Supervisor;* Marie LaGuardia.

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New York: 141 E. 44th St., MU 7-0583
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San Francisco: The Robert W. Walker Co., 57 Post St., Sutter 1-5568

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Copyright 1960 by School Management Magazines, Inc. Published monthly by School Management Magazines, Inc., 22 West Putnam Ave., Greenwich, Conn.

A publication of **The Management Publishing Group**
Editorial and Administrative Offices: 22 West Putnam Avenue, Greenwich, Conn.
William S. Kline, **President;** *Jerome W. Harris,* **Editor-in-Chief;** *Edwin D. Kline,* **Business Manager**

November 1960

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VOL. 4 NO. 11

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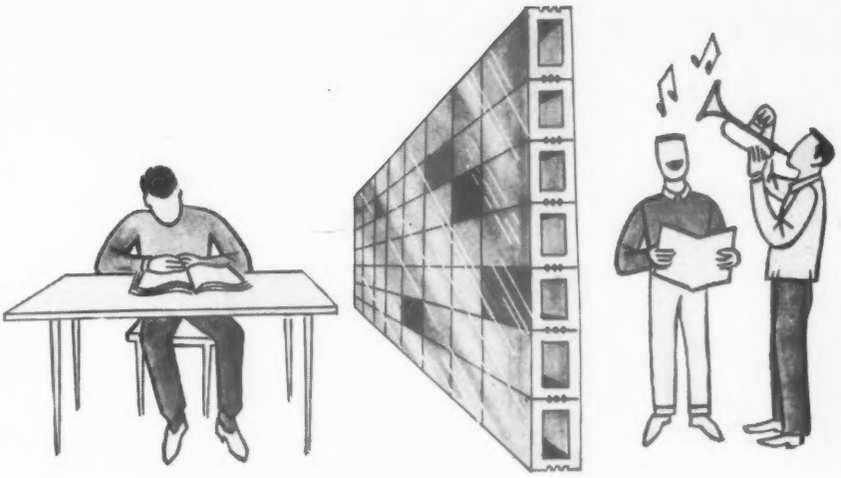

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A sampling of correspondence across the editor's desk.

Spread the word

SIR: It was most thoughtful of you to send me the article on the Cost of Education Index. A recurring question as I read the article was: How much of this will get into newspapers and popular publications so that a large number of taxpayers can be advised of these facts? This is such important material that I would hope it could be given very wide distribution.

MILDRED GAYNOR, R.N.
EDITOR
NURSING OUTLOOK
NEW YORK

Electric schools: con

SIR: Your comprehensive story on the use of electric resistance heating in schools was of considerable interest (*see "Should your next school be electrically heated?" SM, Aug., '60).*

As the spokesman for the hydronic heating industry, we also have been analyzing the many facets of school heating costs.

The facts, as shown in a study conducted in Angola, N. Y., do not support your editorial statements about electrically heated schools being cheaper to construct. In general, we have yet to see any electrically heated school built cheaper than a hydronically heated school when a complete comparison is made of all costs of both schools. We frequently see cost comparisons made where the cost of a boiler room and smoke stack are synthesized, then debited from the cost of an electrically heated school and the interest charged to the hydronically heated school. In addition, the space considered for the boiler room is then allocated as an "extra" classroom with an additional credit to the operating costs of the hydronic school for interest on the cost of this "reduced space."

When costs are juggled in this manner, any electrically heated school will always be cheaper to build. The truth of the matter is, that the space required for electrical controls, hot water storage equipment (and, on occasion, transformers), etc., is in most cases equal (and, sometimes more) to that required for a boiler and associated equipment. And, the cost of the chimney is becoming an out-dated consideration. Most boilers installed in schools today utilize forced draft ventilation which requires a small prefabricated duct to eliminate combustion gases.

Incidentally, when comparing estimated annual costs as done on page 75 of your issue, would it not be good accounting practice to include a reserve fund entry for the electric school equal to that set up for the other school . . . or is the electric equipment guaranteed for the life of the building?

P. DOUGLAS GREWER
MANAGER
COMMERCIAL & INDUSTRIAL DIV.
BETTER HEATING-COOLING COUNCIL
NEW YORK CITY

■ *Free copies of the Angola, N. Y., report are available to our readers. To obtain one, circle number 874 on the Reader Service Card.* ED

Training principals

SIR: Your excellent interview-article dealing with the high school principalship and drawing upon the thoughtful replies of Ellsworth Tompkins was another admirable contribution on your part to better education. *(See "What should you demand of a high school principal?" SM, Sept., '60.)*

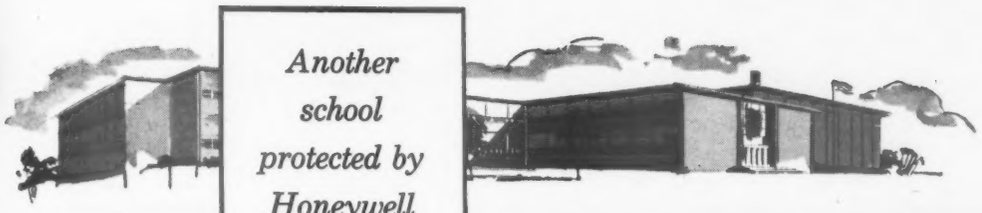
One aspect of the problem of leadership in our growing high schools requires the careful attention of school boards and superintendents today as never before and I only regret that Dr. Tompkins was not questioned on this matter. It is, of course, the matter of our source of supply.

It is quite clear that more, as well as better, people will be needed in the immediate future to fill this important post in our secondary schools. Able men will be found, no doubt, but quite often they are not ready when needed in today's rapidly growing high school population. As one who is interested in helping the right candidate and the right school opening find each other, I am alarmed at the number of well-paying and attractive principalships which are still open in early September because of the lack of available candidates. This is not a regional matter, for there are openings all across the country.

Several forward-looking school sys-

continued on page 10

Another school protected by Honeywell maintenance



Edina-Morningside High School
Architect: Lang and Raugland, Inc.
Consulting Engineers: Frey and Bergsten

Mr. Milton H. Kuhlman, Superintendent of Schools, Edina-Morningside, Minn., says:

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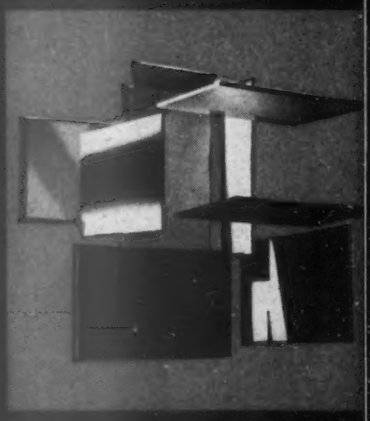

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tems have for many years sought administrative talent within their own ranks and then encouraged the acquisition of background knowledge as well as technical skill which these positions require through local seminar activities and generous leave privileges. Charlotte, N. C.; Riverside, Calif.; and Schenectady, N. Y., are among these school systems. They will have qualified candidates ready as needed, I am sure.

It is clear, however, that unless more school systems plan on a long-range basis, the competition for the best principals will squeeze out many good schools from the ranks of those whose principals are so well identified by your writer and Dr. Tompkins.

DAVID B. AUSTIN
PROFESSOR OF EDUCATION
TEACHERS COLLEGE
COLUMBIA UNIVERSITY
NEW YORK CITY

For merit pay

SIR: I have enjoyed very much the copies of SCHOOL MANAGEMENT sent to me during my just completed three years on my school board.

Your articles on merit pay for teachers *(see SM, Jan '59; Jan '60)* were most interesting. Even though my district was not included in your poll, I feel it necessary to make my personal thoughts known on so vital an issue.

I am well aware that monetary remuneration is not the complete answer to having satisfied, cooperative and dedicated teachers. Physical surroundings, instructional materials and the general atmosphere are just as important. I am well aware that good teachers should be rewarded over the poor teachers with such things as prestige, etc. It seems that the main difficulty of selling "merit pay" for teachers is that the teachers feel that the *only* recognition they would get for good work would be more money. However, in my, mind, "merit pay" for teachers refers only to the method of administering the *dollars* that each teacher receives for her work.

I am in favor of merit pay for teachers! You can call it merit pay, "track plans" or "team teaching" or or make exceptional teachers chairmen or department heads. A rose by any other name will smell just as sweet. All of these methods involve a decision by someone or some group as to which teacher is doing the outstanding job and should receive additional pay, more prestige and more consideration.

The administration of such a merit pay policy should be no more difficult than administering merit pay in industry. This has been successfully practiced for many, many years. I feel that a system of merit pay for school teachers is just as necessary as increased pay levels if we are to achieve an increased quality of instruction. Admittedly, merit pay for teachers is a controversial and much discussed idea. However, the development and progress of our country has only been possible through competition between companies, organizations and individuals. Competition is the life blood of the democratic way. How then, can we expect our teachers to teach our children the democratic way of life if they themselves are not competing in such a system? How can we expect our good teachers to stay good and our poor teachers to become better if there is little incentive? Admittedly, many of our teachers are dedicated people and work hard at their profession just to see a job well done. But the advances thus obtained could be greatly enhanced if additional monetary incentives were offered.

L. E. DEAN
BOARD MEMBER, RETIRED
BARTLESVILLE, OKLA.

Half cost, half effort?

SIR: The article "How to upgrade your science program—at half the cost" *(SM, Sept., '60)* is a misnomer. The last phrase should read "at 150% of cost" instead of "at half the cost." Everyone should know that the cost of any aid received from our federal government is approximately twice as expensive as using local funds.

Our school board has given considerable thought and discussion, with divided opinion, as to whether or not to accept funds which had been appropriated under the National Defense Education Act of 1958. I believe we are just as interested in a good science and language program as any other district. We do not particularly enjoy paying a part of our federal income tax for benefits received by other areas, but up to the present time, a majority of our board members have felt that we could not afford to participate in this program. When your "uncle" pays half the cost, you are not going to exert the same effort to get your money's worth as when you pay the entire cost. We also believe the freight and handling expense on any tax money which goes to Washington and then comes back in the form of federal aid is too high.

HOMER LONGENECKER
VICE-PRESIDENT OF BOARD
PASADENA INDEPENDENT SCHOOL DISTRICT
PASADENA, TEX.

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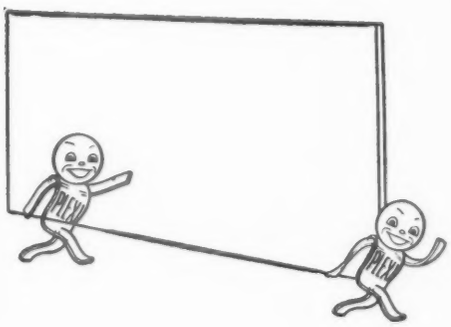

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TV in the classroom. How the classroom should be arranged for television viewing is the subject of a new brochure issued by Sylvania Lighting Products. Outlined are three desirable goals in classroom arrangement: good visibility of picture, comfortable visual situation and encouragement of good attention. Recommendations are given for establishment of screen height and viewing distances, the use of window shades, the use of electric light both for direct and indirect lighting and ways to minimize reflections. Several arrangements are diagrammed and special lighting for viewing is discussed.

For a free copy of this brochure, circle number 879 on the Reader Service Card.

Sound systems designs. An illustrated brochure describing a complete line of communication and program systems for school installation is available from DuKane Corp. Descriptions of 12 standard sound systems are presented with directions for assembling components to meet a variety of functions.

For a free copy of this brochure, circle number 878 on the Reader Service Card.

The story of rubber. A 53-frame filmstrip and a 36-page booklet, both dealing with the history and uses of rubber, are available from U.S. Rubber Company. Natural and synthetic rubber are discussed in language understandable to upper elementary and junior high school youngsters. Included with the filmstrip is a teacher's guide.

For free copies of these materials, circle number 875 on the Reader Service Card.

Wood gym floor maintenance. A manual of clear, detailed instructions on all phases of wood gym floor maintenance —sanding, sealing, daily clean-up—is available from Huntington Laboratories. It is written for the maintenance man and details ways to save time and labor while keeping gym floors in tiptop condition. Step-by-step diagrams, together with the tools needed for each step and concise directions on how to use them, make the instructions easy to follow.

For a free copy of this manual, circle number 870 on the Reader Service Card.

Food service machines. An illustrated booklet describing food handling and service machines is available from Hobart Manufacturing Co. Computing scales, power meat saws, meat choppers, coffee mills and meat slicers are among the machines presented. Food waste disposers are also featured, as are mixers and cutters for large or small baking operations.

For a free copy of this booklet, circle number 864 on the Reader Service Card.

Ordering pencils. A 24-page color catalog listing 81 different pencils for school use is available from J. S. Staedtler, Inc. Pencils included are designed to suit standard and specialized requirements. Reproducing, indelible, hectograph pencils and pencil erasers, drafting pencils and mechanical pencils are among the designs described. The catalog contains three indexes.

For a free copy of this catalog, circle number 852 on the Reader Service Card.

Selecting power stations. Compact electrical substations for school installation are described in a bulletin available from I-T-E Circuit Breaker Co. The units which can be located at load areas in a minimum amount of space are designed to eliminate power issues from long runs of low-voltage cable.

For a free copy of this bulletin, circle number 876 on the Reader Service Card.

How to plan locker lay-outs. A planning aids section that provides basic locker information to help in the planning of efficient, economical locker lay-outs is included in a 24-page catalog available from Penco Div., Alan Wood Steel Co. Illustrated and described are nine locker styles including single tier lockers, double tier lockers, multiple tier lockers, two-person lockers, dual lockers, duplex lockers, etc. Complete dimensional information is given for each style and design and construction features are highlighted. Clip-type and standard-bolt-type shelving, steel counters, wardrobe and storage cabinets and bookcase shelving are also discussed.

For a free copy of this catalog, circle number 891 on the Reader Service Card.

Building products catalog. A comprehensive register of all new building construction products is available from the Flush-Metal Partition Corp. The catalog lists materials distributed by a wide group of manufacturers. Products are listed in tables summarizing the outstanding specifications, construction features and trade names. Materials, thicknesses, finishes and dimensions are among the data presented.

For a free copy of this catalog, circle number 880 on the Reader Service Card.

Science film directory. A colorful, up-to-date loan film directory listing 16 mm motion pictures and 35 mm stripfilms, is now available from Scientific Apparatus Makers Assoc. The directory lists films by name, gives brief descriptions of them and cites resources from which they can be borrowed. Subjects covered include biology, nuclear power, documentaries on glass (its manufacture and use), the physics of sound, electricity and junior science facilities in secondary schools. The directory was compiled to fill a need for

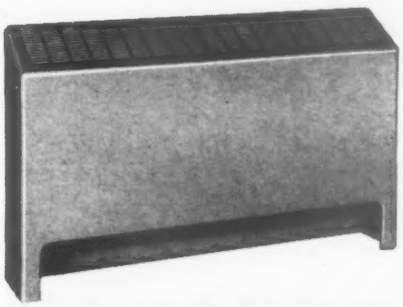
continued on page 120

The G-60 gas-fired boiler

The A-7 boiler for oil or coal

CAST IRON BOILERS WIN TOP HONORS

with school administrators for easy care and low-maintenance costs. These American-Standard boilers are smaller, more compact...can be installed in a limited area...and there's a model for every type of fuel. The entire unit is durable, long-lasting. Only with cast iron boilers is it possible to replace sections easily or add sections as the school is enlarged or modernized. And only cast iron boilers deliver even, draft-free heat so economically, so efficiently.



Multifin Convectors provide low cost hot water or steam heat for every type of schoolroom. Sturdy steel cabinets are available for free-standing, partially or fully recessed installations.

For more information see your local American-Standard sales office or write AMERICAN-STANDARD PLUMBING AND HEATING DIVISION, 40 W. 40th St., New York 18, N.Y.

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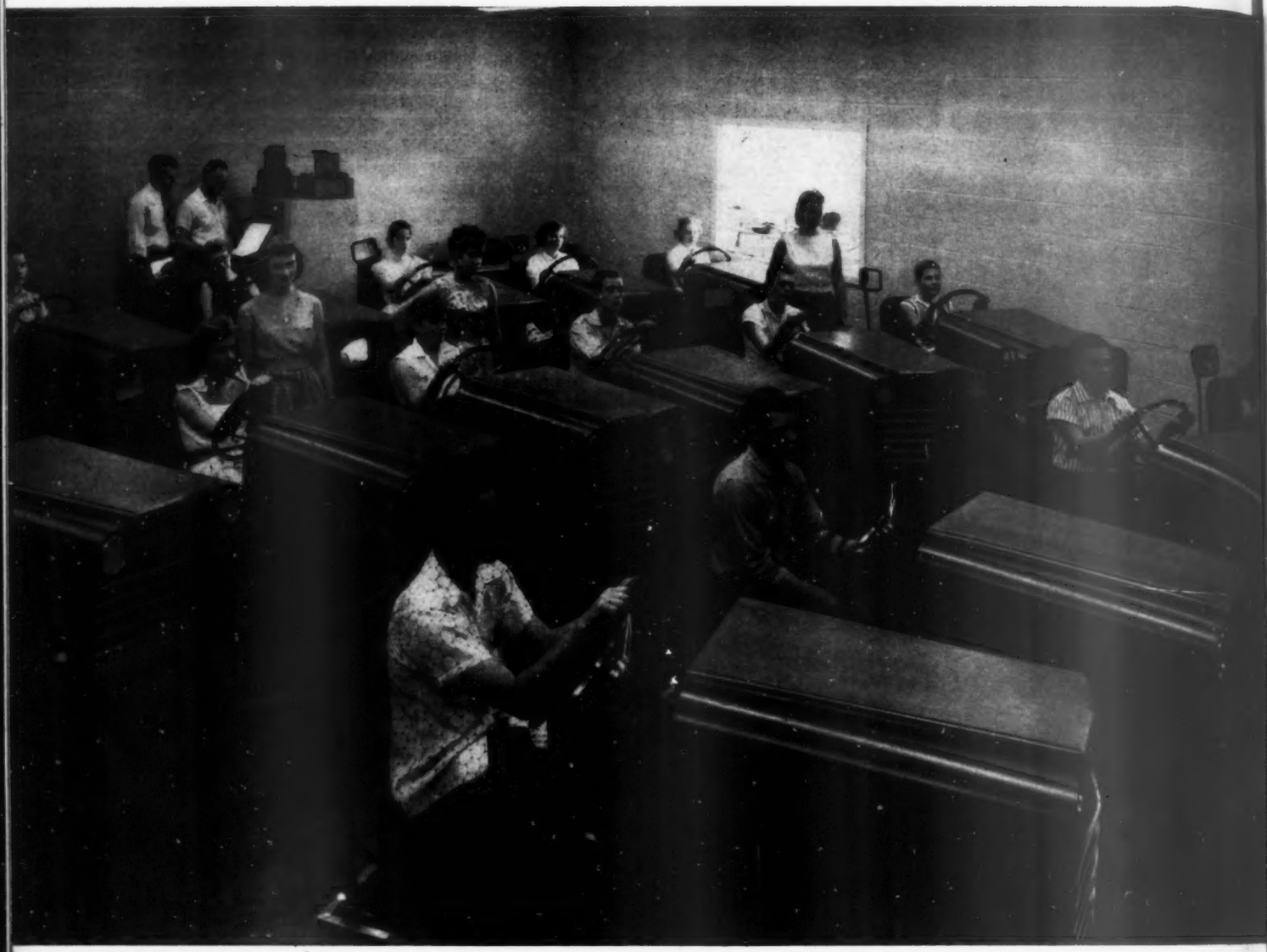
AMERICAN-Standard

PLUMBING AND HEATING DIVISION

(Circle number 703 for more information)

DRIVOTRAINER—MODERN WAY



ON THE HIGHWAY IN THE CLASSROOM—Stationary cars, a series of special training films and an automatic score recording unit are basic components of the Drivotrainer classroom system. By multiplying the number of students that can be taught by one instructor, Drivotrainer permits more efficient use of teaching time available.

A LIFETIME OF DRIVING EXPERIENCE is duplicated by the film series used. Photographed from a moving car, films project on the screen what student would see through his own windshield. Students can be drilled in a full range of highway emergency situations until a satisfactory level of proficiency is achieved.

TO BETTER DRIVER EDUCATION

Helps teach more students faster, at lower costs

Faced with the need to provide effective driver education and training to an increasing number of students, high schools across the country are utilizing the Aetna Drivotrainer system of classroom instruction. With the Drivotrainer, an electro-mechanical teaching aid, one teacher can instruct as many as twenty-four students at the same time. Because students can "drive" through all kinds of situations *before* actually going on the road, safe driving skills, proper attitudes and sound judgment can be developed without any risk to life or property. Used to supplement behind-the-wheel instruction and experience, Drivotrainer offers these important advantages:

Better educational value—students are exposed to a wide range of learning situations, can be conditioned to react quickly and correctly to emergencies—the real test of driving ability.

Saves teaching time—hours needed for on-the-road instruction in dual-control car can be cut in half, still meet required standards.

Cuts costs per pupil—training more students in less time, *without* increasing the teaching staff, results in measurable economy.

The Drivotrainer system was originally developed as a public service by the Aetna Casualty and Surety Company through extensive work with a panel of nationally known educators. To carry this program forward, Rockwell Manufacturing Company is now producing and distributing the Drivotrainer for use in schools as well as for application in the re-training of experienced drivers. For further information on the Drivotrainer installation best suited to *your* needs, write: Rockwell Manufacturing Co., Drivotrainer Division, 405L, N. Lexington Ave., Pittsburgh 8, Pa.

FULLY EQUIPPED with all essential instruments and controls, cars can be used for teaching both conventional and automatic shifting, simulate motor noise and brake pedal "Feel" for added realism.

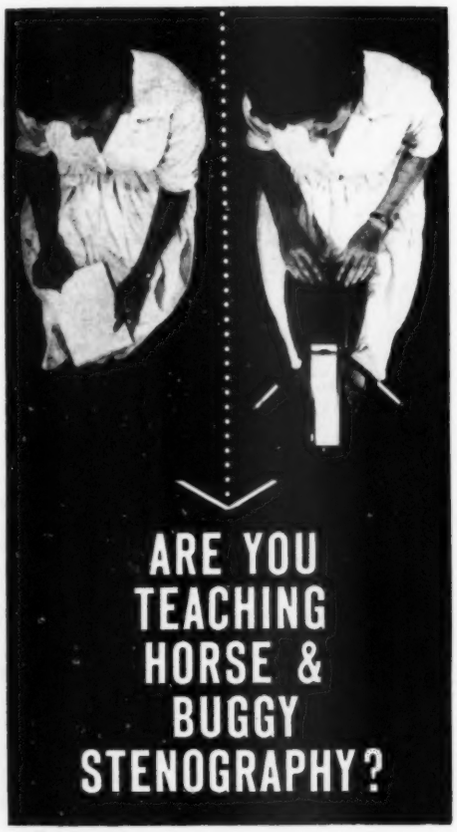
AUTOMATIC SCORING SYSTEM records student actions on master sheet, enabling instructor to follow individual performance as well as indicating level of class progress.

DRIVOTRAINER

another fine product by

ROCKWELL

(Circle number 751 for more information)



As the automobile replaced the horse and buggy, so is the Stenograph shorthand machine replacing the pad and pencil.

The change-over began with court reporters who were quick to take advantage of Stenograph's amazing speed—it can take dictation faster than anyone can talk. They were impressed by the fact that anyone with some training can accurately transcribe Stenograph notes—they are interchangeable.

Now, more and more business firms are requesting machine trained stenographers, particularly in the medical, legal, scientific and other specialized fields—to the point where the demand has far outstripped the supply.

Now schools teaching Stenograph are discovering that not only is it far easier to learn. but proficiency is developed much faster. Stenograph trained high school graduates are "taking" 140 to 180 words a minute.

These are some of the advantages of the Stenograph—the exciting, modern approach to shorthand.

Stenograph®
SHORTHAND MACHINE

STENOGRAPHIC MACHINES, INC.
8040 North Ridgeway Ave., Skokie, Ill. M-1160

Please send more information about Stenograph shorthand and details on the Stenograph short course for teachers.

name_____

school name_____

address_____

city_____ zone_____ state_____

(Circle number 763 for more information)

SM

A guide to useful information

ELECTRONIC CLASSROOM

Language lab handbook. Here is a guide for language teachers and administrators who want to learn more about the effective use of language laboratories. Fully discussed are: the role of the language lab; equipment, specifications and budget; terminology; scheduling; weekly planning; student motivation; automated programming; supervision; lab exercises and drills; the value of visual aids; and many other subjects related to the electronic classroom.

A special section provides answers to those questions about the function and use of language labs which are most likely to occur to readers of the book. Hundreds of useful facts and clear illustrations add to the value of this volume as an everyday reference guide to the improvement of language teaching today.

SOUND LANGUAGE TEACHING: THE STATE OF THE ART TODAY, *by J. S. Holton, P. E. King, G. Mathieu, and K. S. Pond. University Publishers, Inc., 59 East 54th Street, New York 22, New York. 210 pages. $5.50.*

PROGRAMMING

School purpose. A brochure presenting analysis and criticism of five basic educational issues has been published by the U. S. Office of Education. It discusses questions and topics on character education, high schools for all, American vs. European schools, national school standards, school leaders and present and future school needs. The illustrated booklet outlines basic issues and then discusses them point by point.

SCHOOLS IN OUR DEMOCRACY. *U. S. Government Printing Office, Washington 25, D. C. 26 pages, 15 cents.*

PUBLIC RELATIONS

Orienting parents. The importance of reading and writing skills—and how they can be improved—is explained to parents in this booklet from The National Council of Teachers of English. "Good" English is defined as an effective communication tool involving clear thinking, careful organization of thoughts and proper choice of words to convey ideas. The reasons why the teaching of English is sometimes less successful than it should be, are briefly discussed.

The goals of the elementary and the secondary schools are presented, too, as well as what colleges should accomplish in this area. Particular attention is paid to the role parents can play in improving the reading, writing, and speaking abilities of their youngsters. The booklet presents specific ways in which they can cooperate with teachers to this end.

THE FIRST TWO R'S—PLUS. *National Council of Teachers of English, 508 South Sixth St., Champaign, Illinois. 12 pages. 10 cents.*

HIGHER EDUCATION

Program grants. A summary of educational program grants administered under Titles by the Office of Education, has been prepared in a 62-page booklet for the fiscal year ending June, 1959. Statistics are given on student loans, national defense fellowships, language development and area vocational education programs. Research and experimentation presented include the utilization of television, radio, motion pictures and related educational media. Tables are included which graph developments under each Title area.

THE NATIONAL DEFENSE EDUCATION ACT, 1960, *U. S. Government Printing Office, Washington 25, D. C. 62 pages, 45 cents.*

CURRICULUM

Integrating elementary courses. The University of Texas has published results of a study on the proper method and reasons for integrating curriculum in elementary schools. A synthesis of two separate dissertations, the report describes practical and theoretical

continued on page 19

Courtesy of Kent State University, Kent, Ohio

for those who believe in the economy of quality

"New Life" Library Furniture is made for those who want long-lasting beauty and maintenance-free service, who expect initial cost to be final cost.

It would be very easy for us to reduce the initial cost of our library furniture. Omitting a finishing operation here, cheapening a construction method there, revising a few quality control procedures, would do it.

But, it wouldn't be "New Life" Library Furniture that we would be selling and you would be buying. It would be a cheapened, corner-cutting substitute. Just that, and nothing more.

It's a fact that a product, made *right* to begin with, costs a whole lot less in the end. And, that's why "New Life" Furniture will continue to be made for those who believe in, and practice, the economy of quality.

We invite you to examine our catalog. We urge you to talk to "New Life" owners, to check our specifications. Prove to yourself that "New Life" is worth whatever effort you make to own it. Start by requesting Catalog L-60. Write to us at the address below.

New Life LIBRARY FURNITURE · SJÖSTRÖM USA

See reverse for "a look around a 'New Life' library" ▶

JOHN E. SJÖSTRÖM COMPANY, INC., 1717 N. TENTH ST., PHILADELPHIA 22, PA.

take a look around...

The circulation desk at Kent State University is believed to be the longest in this country and, possibly, in the world. We know it to be the largest "New Life" sectional-type desk ever assembled.

This beautiful lounge area is designed for restful, easy reading. The furniture is graceful, yet sturdy, and is designed to complement practically any decor.

the "New Life" library at Kent State University in Kent, Ohio

Card catalog, shelving, reference tables, and stools are featured in this view of the catalog and reading area. The size of this three-floor library requires considerable reference and cataloging facilities, properly arranged for heavy traffic.

Catalog Card Unit, No. 191-72
Shelves, No. 120 and 121
Stool, No. 165

Specially made to specifications, the conference table shown is utilitarian, beautiful in design, sturdy in construction. We are always happy to work with administrators in developing models to meet special requirements.

Another reading, lounge, and study area, one of many in Kent's library shows a variety of "New Life" units. Rectangular and circular tables, individual study tables at left, and lounge furniture, right, are arranged in an inviting, attractive manner.

Rectangular Table, No. 210
Study Table, No. 216
Settee, No. E842
Magazine Table, No. 200
Round Table, No. 214
Lounge Chair, No. E840
Chairs, No. 360

Other views of this beautiful library are shown on the reverse of this page. The library at Kent State has a book storage capacity for 550,000 volumes and a seating capacity of 1,400. The library is housed in a three-story building which provides 87,788 square feet of space.

New Life LIBRARY FURNITURE **SJÖSTRÖM USA**

when you want the best—the very best

PRINTED IN U.S.A.

JOHN E. SJÖSTRÖM CO., INC., 1717 N. TENTH ST., PHILADELPHIA 22, PA.

approaches to curriculum integration and explains how to apply them. The 176-page booklet treats integration problems and procedures, observation of present school procedures and the reliability and validity of integration plans. Curriculum guides and significance of major findings in the study are included. A framework is also presented for examining curriculum integration in schools.

THE CURRICULUM INTEGRATION CONCEPT APPLIED IN THE ELEMENTARY SCHOOL, *by James M. Ward, John E. Suttle and Henry J. Otto, The University of Texas Press, Austin 12, Texas, 176 pages, $2.00.*

Free materials. A revised comprehensive guide to 1,300 titles of free curriculum materials is available from Educators Progress Service. The guide provides a complete annotated source listing of selected free maps, bulletins, pamphlets, exhibits, charts and books.

A classified table of contents allows easy reference to materials. The body of the guide gives full information on each title by areas. Materials are also included for teacher reference and professional growth which, while not suitable for pupil use, furnish valuable aids to the teacher.

The title index directs the reader to any specific listing in the guide while the subject index presents subject references alphabetically. Names and addresses of the organizations from which materials can be obtained, together with the page references for each individual item, are found in the guide's source index. Specific teaching techniques for materials are also presented in seven different units as a teacher's manual.

ELEMENTARY TEACHERS GUIDE TO FREE CURRICULUM MATERIALS, 1960, *by A. P. Horkheimer. Revised edition, Educators Progress Service, Randolph, Wis. 346 pages, $7.50.*

SCHOOL CONSTRUCTION

Planning the school plant. How to use available resources to best advantage—through capital budgeting—is discussed in this study of the whole problem of school plant planning. The book contains an abundance of information useful to those involved in school building. Subjects covered include the useful life of school buildings, the determination of need for additional schools, architectural economies, relating the school building to the educational program and the importance of capital budgeting in the total school construction plan. Revenue, costs, fi-

Bruning's amazing new Copyflex 105 copying machine *costs no more than a typewriter,* saves hundreds to thousands of dollars annually in the preparation of transcripts of student records, progress reports, schedules, accounting reports, examination sheets, purchase orders and a host of other paper work.

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nancing, educational needs, obsolescence, location and design are treated as inseparable parts of the school planning program.

ECONOMIC PLANNING FOR BETTER SCHOOLS, *by Benjamin Handler. Department of Architecture, University of Michigan, Ann Arbor, Mich. 107 pages $5.00.*

GUIDANCE

Foreign language counseling. A 67-page booklet which answers student questions on foreign language study, has been prepared by the U. S. Office of Education. Sections treat the "why, who, when, which, and how long" of foreign language study and present the most recent facts on modern language programs.

Entrance and degree requirements are graphed for all colleges in the U. S. Both B.A. and B.S. requirements are included. References in the booklet offer foreign language guidance services, tests in modern foreign languages and vocational opportunities in language fields.

MODERN FOREIGN LANGUAGES—A COUNSELOR'S GUIDE, 1960, *U. S. Government Printing Office, Washington 25, D. C., 67 pages, 30 cents.*

How **DUDLEY** gives you the best in Combination Locker Locks

RD-2
Rotating Dial Combination Padlock
Solid stainless steel case with white numbers on black enamel.

Every Number Works

Dudley Combination Locker Locks operate with a 3-number combination on a dial with 40 divisions giving 64,000 possible combinations. Most important is the use of all three numbers—not just two.

As the hasp is pushed in place when locking, the last number spins out of position and cannot be identified, thus making use of the full three numbers.

Each number of the combination is a working number, making the discovery of the opening combination by trial and error, a practical impossibility.

This is just one of the advantages of Dudley Locks which made them favorites among school people everywhere for 39 years.

RP-5
Combination Padlock with Revolving Knob Pointer
Solid brass case with white numbers on black enamel.

DUDLEY LOCK CORPORATION
1436 Old Dixie Highway, Vero Beach, Fla.
The standard of controlled locker protection since 1921
(Circle number 718 for more information)

PUBLIC EDUCATION

Progress report. This 68-page booklet from the Office of Education presents the progress of public education in America during the year 1959-60. Full treatment is given to educational programs which have particular significance at the present time. The booklet traces the development of our educational system from colonial times and explains the organization of our schools, the basis of their control and the sources of their support. Information on study plans, curriculum, international education, teaching staffs, research and other services is presented under major headings in descriptive, tabular or graphic form.

PROGRESS OF PUBLIC EDUCATION IN THE UNITED STATES OF AMERICA 1959-60. *U. S. Government Printing Office, Washington 25, D. C. 68 pages, 30 cents.*

TEACHER TRAINING

Classroom discipline. A collection of aids for proper student discipline and control has been prepared in a booklet by the California Teachers Association. The methods are designed to serve school districts in new teacher orientation, in-service education programs and as resource material for every teacher. The booklet analyzes problems and explains proper ways to cope with them. Each situation is illustrated for emphasis.

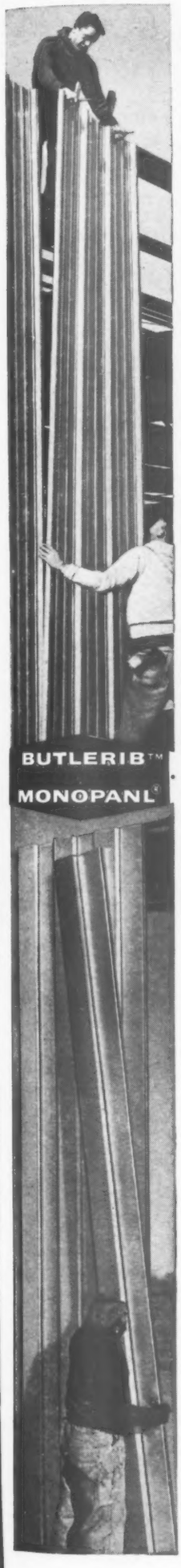
CLASSROOM DISCIPLINE, *by Emery Stoops and John Dunworth, Economics Press, Inc., Montclair, New Jersey. 41 pages. Single copies $1; 50 copies 70 cents each; 100 or more copies, 60 cents each.*

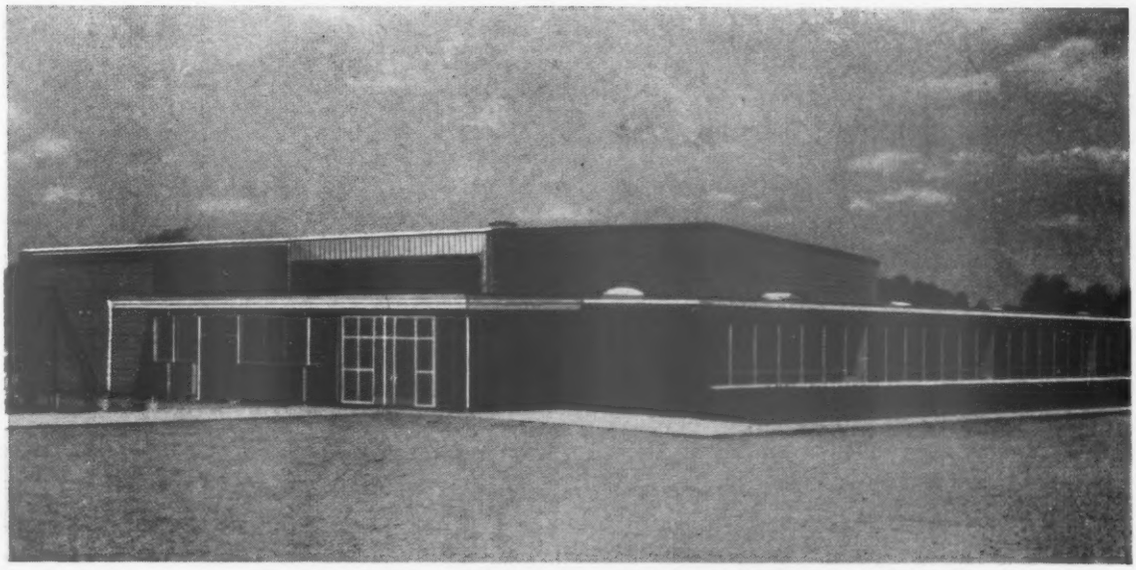
SCIENCE INSTRUCTION

Filmstrips on electronics. A series of seven filmstrips presenting the basic concepts of electricity are available from the Jam Handy Organization. Eligible for purchase under Title III of the National Defense Education Act, the filmstrips aid science teachers in demonstrating electrical theories and principles.

The individual filmstrips treat: static electricity, current electricity, producing electricity, producing electricity in small amounts, electromagnets and how they function, home use of electricity and using electricity safely. The series is intended primarily for later elementary and junior high science classes.

FILMSTRIP SERIES, *The Jam Handy Organization, 2821 East Grand Boulevard, Detroit 11, Michigan. Individual filmstrips $5.75; Series $36.50.*





A BUTLER BUILDING EXCLUSIVE...CHOICE OF TWO SUPERIOR WALL PANELS IN COLOR

DAVIS, KAINLAURI & ASSOCIATES, ARCHITECTS & ENGINEERS, ANN ARBOR, MICH.

Big school "luxury" on a modest budget

...*Butler gym–auditorium conserves funds*

Ringed by contemporary-style classrooms, this new Butler gymnasium-auditorium serves the high school and community of Whitmore Lake, Michigan—with big school "luxury" on a modest budget. And what an investment in the future! All the strength and permanence of steel in a building with spacious, clear-span interior . . . so adaptable to all the varied functions it must serve. A handsome building—yet, it was "brought in" for far less than the cost of old fashioned construction.

Butler's precise, pre-engineered structurals are only part of the picture, however. We invite you to compare Butler's superior roof and wall panels with any others on the market, in terms of engineering and design. Of special interest is Monopanl,® Butler's exclusive factory-insulated panel—actually a complete wall in itself. Sculptured surfaces of aluminum or long-wearing galvanized steel combine architectural beauty with strength and low maintenance. Butlerib™ (precision-formed standard panel for roof and walls) and Monopanl are both available in a selection of durable, factory-applied colors.

Why settle for less when you can build Butler—the lowest-cost way to build well! For details, call your Butler Builder. He's listed in the Yellow Pages under "Buildings" or "Steel Buildings". . . or, write direct.

BUTLER MANUFACTURING COMPANY

7520 East 13th Street, Kansas City 26, Missouri

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Manufacturers of Metal Buildings • Plastic Panels • Equipment for Farming, Transportation, Bulk Storage, Outdoor Advertising Contract Manufacturing • Sales offices in Los Angeles and Richmond, Calif.• Houston, Tex. • Birmingham, Ala. • Kansas City, Mo. Minneapolis, Minn. • Chicago, Ill. • Detroit, Mich. • Cleveland, Ohio • New York City and Syracuse, N.Y. • Washington, D.C. Burlington, Ontario, Canada

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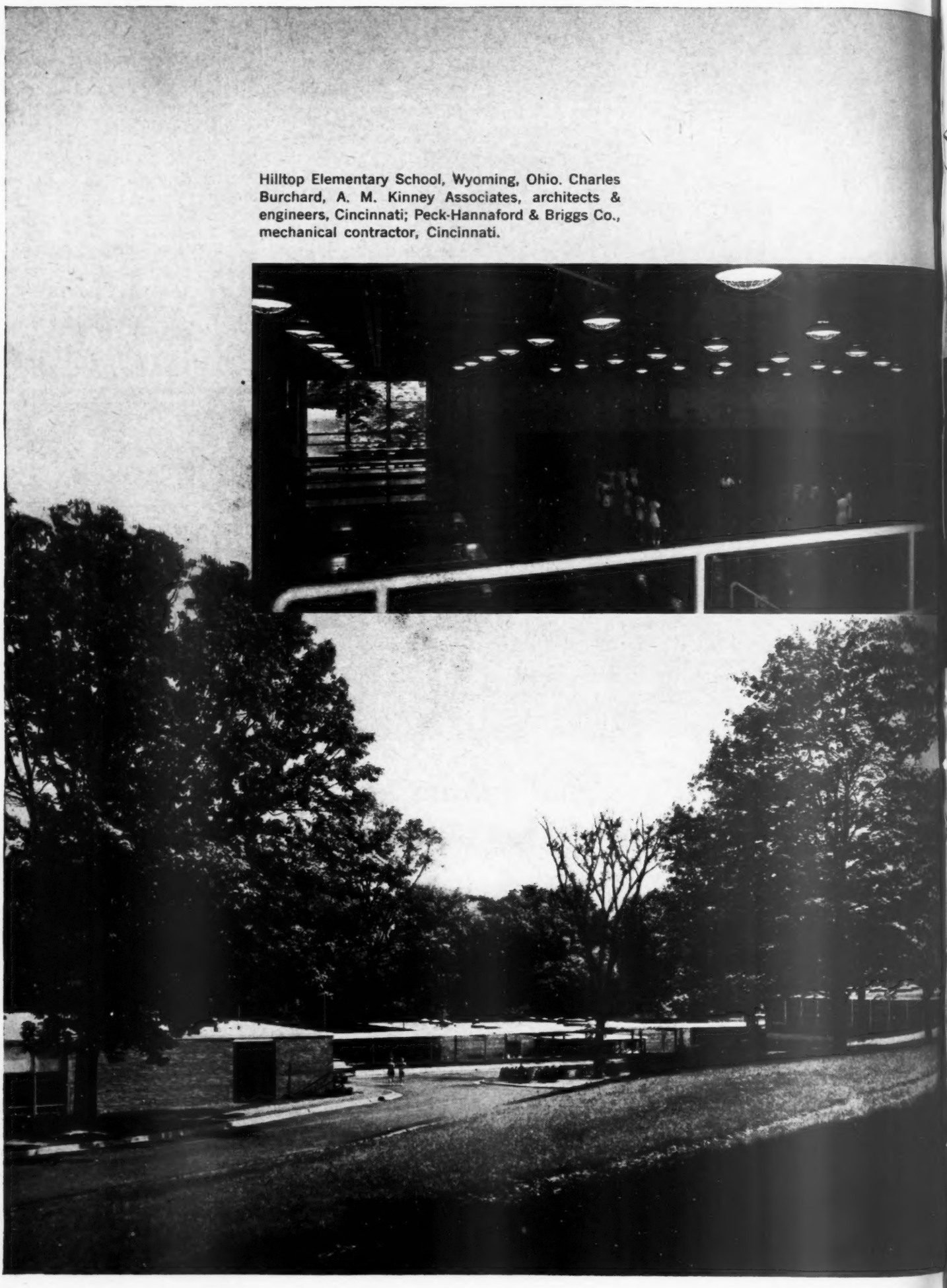
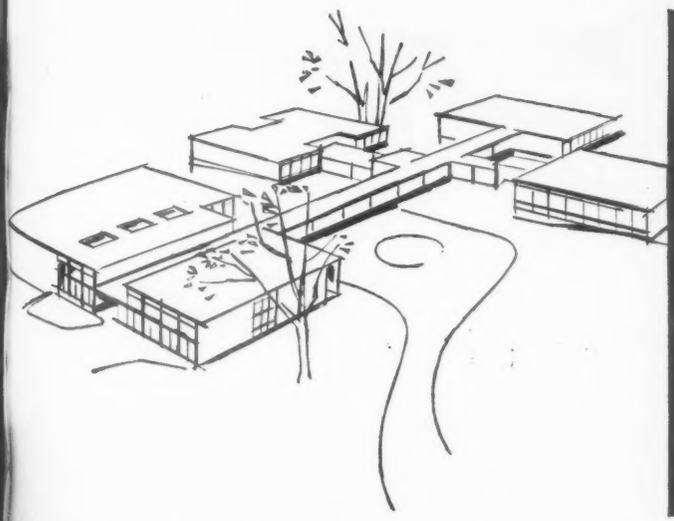


Hilltop Elementary School, Wyoming, Ohio. Charles Burchard, A. M. Kinney Associates, architects & engineers, Cincinnati; Peck-Hannaford & Briggs Co., mechanical contractor, Cincinnati.



Johnson Pneumatic Control lets you CUT THE COST OF COMFORT!

Forward-thinking planners created a pleasant, highly efficient environment for learning in Hilltop Elementary School, Wyoming, Ohio. Situated on a large wooded site, the campus-planned school consists of four separate buildings connected by covered walks. Three contain classrooms. The fourth houses the kindergarten, multi-purpose room, and kitchen.

Naturally, careful consideration was given to providing a thermal environment that would contribute the most to this modern school. This is accomplished by a specially planned Johnson Pneumatic Control System which regulates radiant ceiling panels and ventilating units utilizing high-temperature water. With a Johnson Thermostat on the wall of each room, youngsters get the benefit of closely controlled thermal conditions at all times.

Engineered for economy as well as for comfort, this weather-compensated Johnson System results in important fuel savings. And, being pneumatically operated, it will provide efficient, trouble-free control for the life of the school.

A Johnson Pneumatic Control System such as this is the finest obtainable, yet its economic advantages result in the lowest possible lifetime costs. That's why quality-built schools everywhere rely on Johnson Systems. When you build or modernize, it will pay you to do the same. Johnson Service Company, Milwaukee 1, Wisconsin. 105 Direct Branch Offices.

JOHNSON CONTROL

PNEUMATIC SYSTEMS

DESIGN • MANUFACTURE • INSTALLATION • SINCE 1885

(Circle number 737 for more information)

new polymer finish you can buff!

JOHNSON'S® (super) shurtred®

EXTRA SAFETY

New polymer formula makes floors safer to walk on. No other product especially designed for safety looks as good, walks as well, and saves you so much money. Listed by Underwriters' Laboratories, Inc.

DURABLE

Your floor *stays* good-looking even under the roughest kind of traffic. New Super SHUR-TRED resists scuffing and rubber marks—stands up under the worst kind of punishment. You save work and money, because Super SHUR-TRED requires so little maintenance.

BUFFABLE

Now floors can be buffed after heavy traffic to restore good looks in trouble spots like entrances, traffic lanes. SHUR-TRED buffs to a like-new shine, yet never takes the kind of work that other products require.

Call your local Johnson's Wax Distributor today. For his name, write to S. C. Johnson & Son, Inc., Dept. SM11 Racine, Wis.

SHUR-TRED is a product of JOHNSON'S WAX SERVICE PRODUCTS DIVISION

(Circle number 738 for more information)

Basic information that schoolmen can use as part of a community education program

Are year-round schools the answer to overcrowding?

All-year schools will relieve some of the enrollment pressures in your district. But they have drawbacks. Here is what your public ought to know about the pros and cons of the year-round school.

■ ■ ■ All-year schools are really old hat. For years, summer sessions conducted in districts throughout the country have, in effect, kept schools open on a year-round basis.

Today, these programs are no longer restricted to makeup and remedial work for slow learners. Many now also enable talented students to supplement and enrich their conventional studies with advanced courses. In schools with such programs underway, it is but a step from this year-round use of school facilities by student volunteers to the development of full-scale, 12-month programs for all pupils.

A booklet just published by the American Association of School Administrators* sums up several approaches to the year-round program and cites the advantages and disadvantages of each. Common to all of them is the fact that they can provide for better utilization of existing school facilities. For that reason alone, they are something your public should consider when looking for solutions to the problem of overcrowded schools in your district.

The reasoning behind the all-year school plan is disarmingly simple. "Schools cost us money whether classes are in session or not," say the plan's proponents. "Fixed charges and maintenance costs must still be met—even during the traditional summer hiatus. So why not keep our schools going all year?"

There are several ways to do it. First among them is the staggered four-quarter system. Under this arrangement, each quarter of the student body attends school for nine months a year. But vacation periods are staggered so that they fall during different seasons. The result: some students go to school from winter through summer, some from spring through fall, some from summer through winter and the remainder from fall through spring. Teachers normally follow the same schedule.

Pros and cons

Advocates of the staggered quarter plan feel that several gains flow from it. Most important: better utilization of existing staff, facilities.

Theoretically, the same school plant, staffed by the same number of personnel, provides for the education of 25% more students.

What's more, it does away with the need for double sessions in overcrowded school systems and substantially reduces the need for new buildings, facilities and equipment. Finally, teacher turnover dwindles since the full-time employment available to staff members is incentive enough to retain them in the school system.

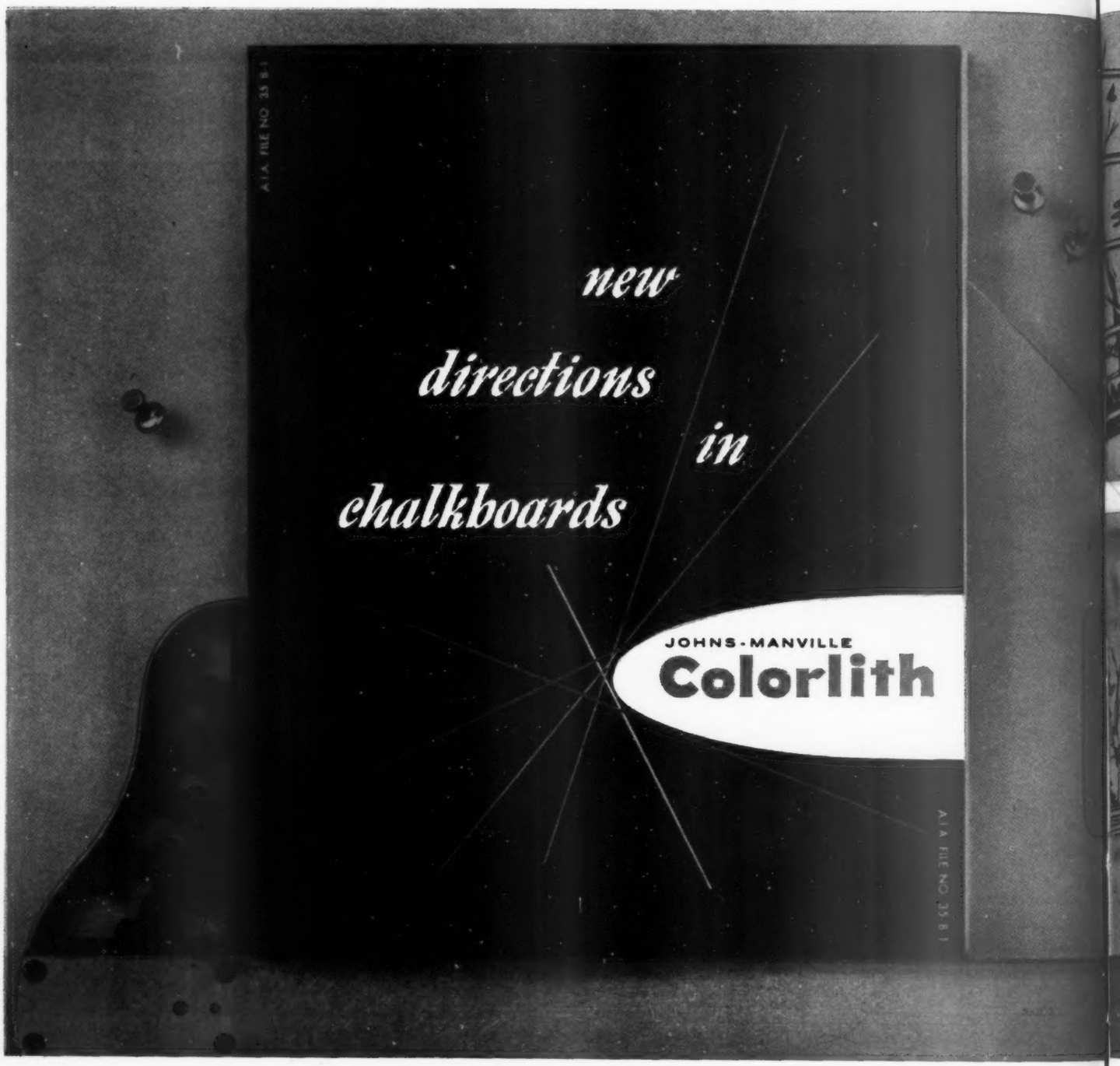
But there are several complicating factors built into the staggered quarter plan. For one thing, it is critically important that enrollments be exactly divided into four equal parts by both subject and grade level. Where does this leave the overcrowded small school without enough pupils to make efficient pupil-teacher ratios possible in all four quarters? *(See "Florida says no to the all-year school," SM, Nov.-Dec.'57.)*

Among other objections to the plan are these:

■ **Community reaction.** To be successful, the plan assumes community approval. But many parents

continued on page 28

* YEAR-ROUND SCHOOL. *Published by American Association of School Administrators, 1201 16 St. N.W., Washington 6, D.C. 26 pages. $1.*



New chalkboard idea booklet shows advanced classroom

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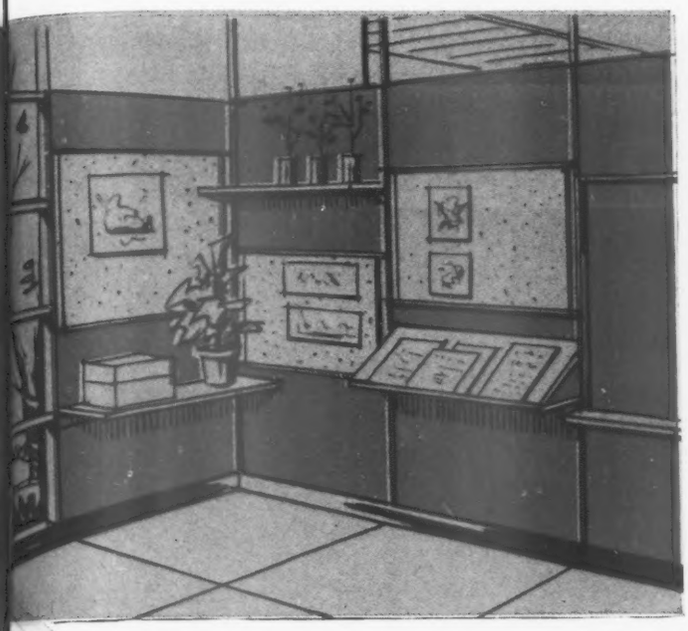
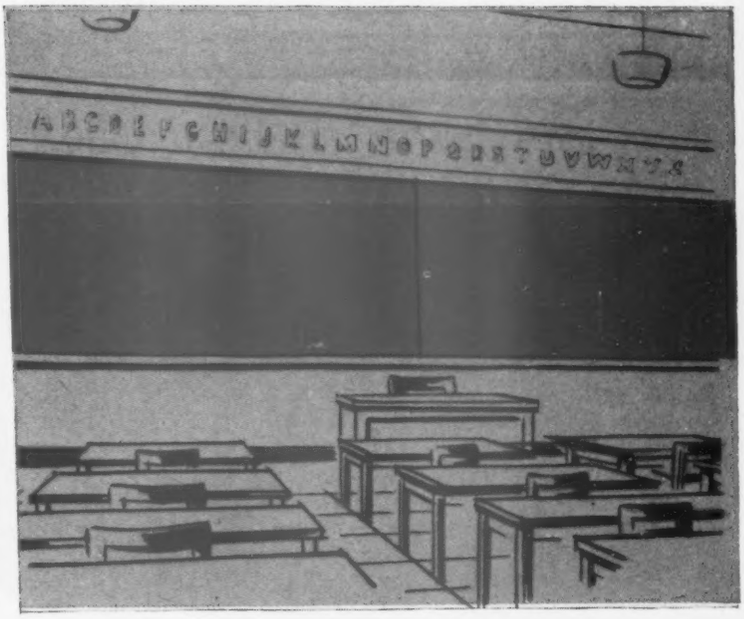
Your imagination can lead to exciting new ideas in classroom design when you use J-M Colorlith chalkboard. This versatile and unusual asbestos-cement material makes possible many novel construction features . . . such as partitions, doors, wardrobe panels, movable storage units, convertible and easel-reversible units. Yet for all its structural strength and integral color, J-M Colorlith costs less than other quality boards!

The three regular Colorlith shades—Cyprus Green, Cameo Brown and Charcoal Gray—have been supplemented with deep, warm J-M Spruce Green. This new blue-green chalkboard is high in visual contrast with a desired reflectance factor of 15%. And, for use as a still or motion picture screen, you can specify Colorlith in Projection White. Panels in all colors are 4′ x 8′, light in weight, easy to handle





Shown here are excerpts from "New Directions in Chalkboards," a colorful, 16-page brochure containing many exciting chalkboard designs especially created for Johns-Manville by Peter Schladermundt Associates, noted industrial designers.

Detailed schematics show how Colorlith can be installed with or without trim, combined with tackboard, using snap-on chalk trays, and in many other ways. Just fill out the coupon below for your free copy of this instructive brochure.

designs made possible by J-M COLORLITH®

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(Circle number 736 for more information)

PROPERTY PROBLEMS—2

IF your school board asked you to account for all property and equipment in the system . . . could you tell the members what there is, where it is, how much it is worth today, and how long it is likely to last? Does each principal and administrator know what equipment he is responsible for? Could equipment be purchased when identical items are lying unused and forgotten in the system? Do your property accounting procedures comply with auditing practices?

Questions such as these often trouble school board members and officials. They bear the final responsibility for properties whose values have increased rapidly in recent years. But they may lack the basic information they need—accurate knowledge of what they have.

This happens because property records become outdated. Equipment is moved to a new location, but the records are not changed. Items may disappear or be damaged. Errors in the records are inevitable.

Many school systems have found that the best answer to these problems is an appraisal which provides a detailed description of all property and equipment, current replacement cost, and depreciated value. School officials use this information to control and account for property, and for other purposes such as determining the proper amount of fire insurance.

Such an appraisal should be prepared by valuation experts who are familiar with school property problems and have up-to-date information on current building and equipment costs.

A nation-wide organization, Marshall and Stevens offers a School Valuation Department staffed by engineers with many years of experience in appraising educational institutions throughout the United States and Canada. The informative booklet, The Purposes of Appraisals, is yours for the asking. Just write Marshall and Stevens, Department 42, 6 Church Street, New York 6, New York. Other offices in Chicago, Cincinnati, Dallas, Denver, Detroit, Houston, Los Angeles, Miami, Minneapolis, Montreal, Philadelphia, Phoenix, St. Louis, San Francisco, and Vancouver, B.C.

(Circle number 742 for more information)

would not take kindly to the thought of having youngsters home for 12-week vacations during unconventional seasons of the year. In addition, families with more than one child in school might have them attending during different quarters. This, too, would upset normal home routines and build resistance to the plan. Most imporant, however, is the strain the staggered quarter would place on community resources. Localities would have to cope with 25% of the student population home for vacation during each season of the year.

■ **Costs.** Despite the more efficient use of the school plant growing out of the staggered plan, it could prove more costly than the normal system. For one thing, the use of schools during the hot weather months would require the installation of air conditioning in many districts. Transportation costs would mount, too, since bus loads might be less efficient and personnel would draw salaries for more months each year. Salary increases would also be the rule for teachers electing to work all year, thus adding to annual costs.

■ **Scheduling.** Coordinating extra-curricular activities—varsity sports, band and orchestra, dramatics and the like—would become extremely difficult with one-quarter of the student body out of school each season.

Another plan

A 48-week school year, in place of the current 36- or 40-week year, is another suggested way to keep schools open year-round. Under this system, schools would stay in session during fall, winter, spring and part of summer. For one summer month, schools would close for vacation.

Those favoring this plan feel that it is tailor-made for accelerated programs. Gifted youngsters could complete their education in nine years instead of 12—slow learners could still get through school in the normal 12 years, even with occasional failures.

The program was tried, on a voluntary basis, in Newark, N.J., and Nashville, Tenn., but was finally dropped in both cities. First, because it proved too costly; second, because the accelerated programs did not adequately prepare youngsters for employment (too young) or college (compared to high school graduates elsewhere).

Summer schools

Voluntary summer programs offer many educational advantages. Except that they entail additional cost—for staffing and operating added school sessions—the drawbacks are few. The advantages, though, are many. Both slow and bright youngsters can benefit. The gifted are able to explore and experiment to a degree impossible during the regular school year. Remedial, avocational and recreational programs can easily be included. Even adult educational activities often form part of the offerings in many summer schools today. For these reasons, voluntary summer programs seem to be here to stay.

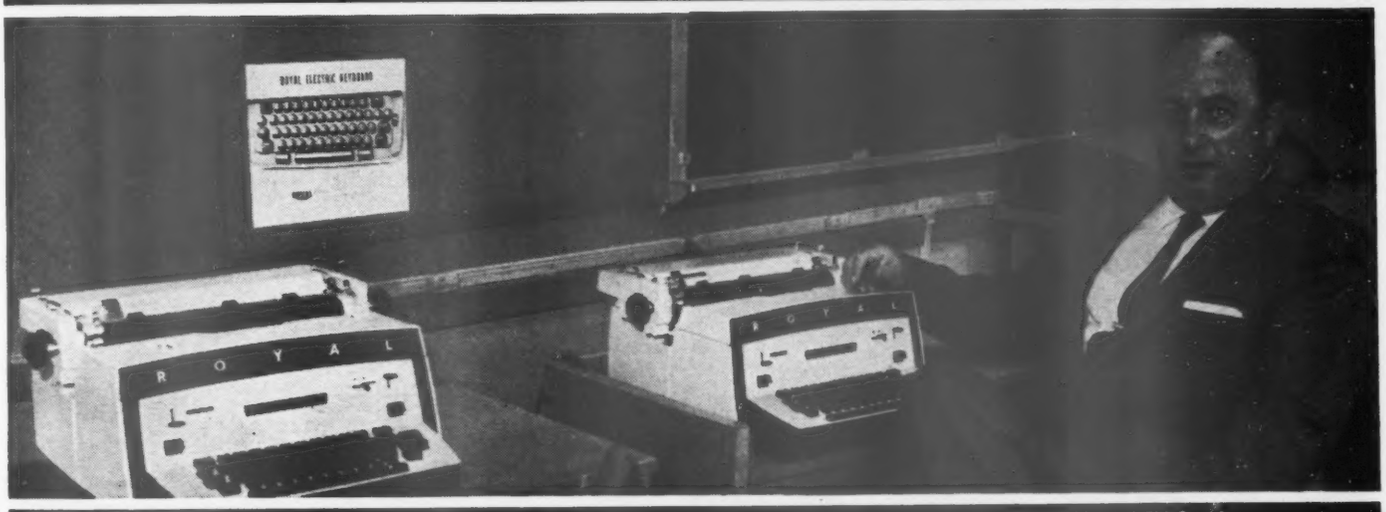
They are even being extended in another direction: the professional improvement of teachers. Under this variation of the year-round school, students are only in attendance for the normal 36- to 40-week year. Teachers, however, are hired on a 12-month basis, with four weeks off for vacation. During the summer months—when youngsters are not in school—teachers join the district's administrators and supervisors in working out instructional and curriculum plans.

Professional summer programs vary considerably from district to district. Some teachers may be doing advanced study in colleges and universities; others may be conducting professional workshops locally; still others may be traveling to increase their understanding of their professional specialties. But all are directed to the same end: to better provide for educational needs.

Summer plans for teacher improvement have their problems, too. They are expensive, adding from 10%-20% to a district's current expense budget. They must be explained carefully to the public since taxpayers often take a dim view of this use of public funds. And, they add to the responsibilities of administrators and supervisors.

But, together with all plans designed to extend the school year, they do make better use of existing school facilities in the long run. This is a factor schoolmen—and citizens—everywhere should consider carefully when trying to improve their educational programs. **End**

SCHOOL BUSINESS MGR. M. PEARLSTONE



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"We're working on intermediate French."

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"We are studying elementary French."

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"We were absent yesterday and are making up the lessons we missed."

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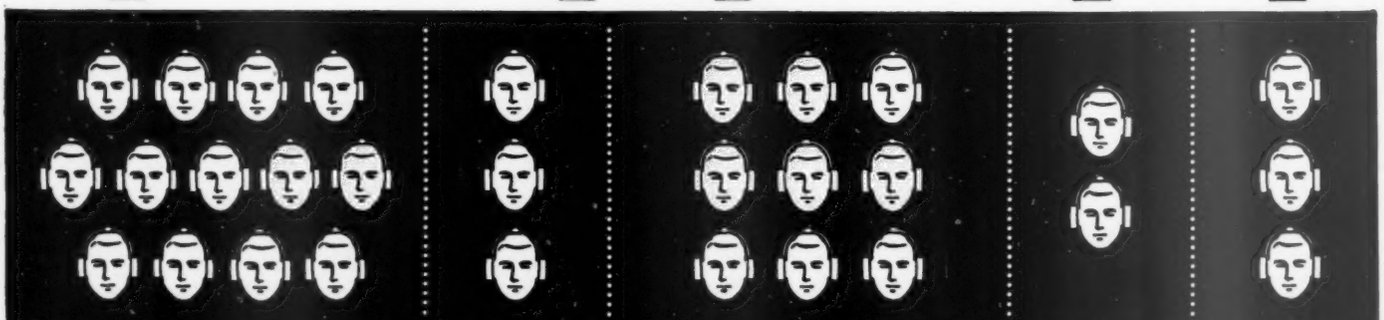
"This system enables us to learn so much faster, we are taking more advanced French lessons."

"Hacemos tareas en español durante nuestro período de estudios."
"We're working on Spanish assignments during our study period."



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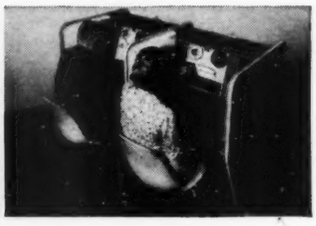

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(Circle number 721 for more information)

NEWS OF THE SCHOOLS

A digest of current happenings in public education

Battle between sexes opens in Virginia

It's the boys against the girls in the sixth grade of the Oakridge elementary school in Arlington, Va., this fall.

Two teachers—Mary D. Galloway and John Hamill—are responsible for the situation. They are conducting a joint experiment with their classes to see whether academic classes can be taught better to boys and girls separately, than they can be taught to combined groups.

Reading, language arts and arithmetic will be taught in the segregated classes. Mrs. Galloway will start teaching the girls and Hamill the boys. At mid-year they'll switch classes to see if the sex of the teacher has any effect on the learning of the students.

Students will also be grouped in science, art and physical education. However, these classes will be divided by the interests of the students, not by sex. Social studies, history and other sixth-grade courses, as well as field trips, will be handled in the traditional manner.

After the first few weeks of the experiment, Mrs. Galloway commented, "Some of the girls feel less self-conscious about talking out in class when they know their boy friends aren't watching."

Colorado committee urges easing teacher licensing

A Colorado committee, appointed by the state legislature, has called for an easing of teacher certification rules. The committee has proposed legislation that would permit persons with "outstanding talent or ability" to teach without getting the education courses usually required.

The committee's action seemed in direct opposition to a bill proposed by the state department of education, which would have tightened certification laws.

Under the committee's suggestion, the state board of education would be authorized to issue "emergency certificates" for specific courses to persons of outstanding ability.

The proposal seemed almost certain to be approved by the state legislature, despite opposition from educators. In an editorial, the influential *Denver Post* hailed the committee and said, "It is a hopeful sign that the Colorado committee . . . has revolted against the idea that knowing *how* to teach is always more important than knowing *what* is to be taught."

Ban on sweets causes drop in school meals

An experiment in two Chicago high schools last spring has been abandoned because it resulted in fewer lunches being bought by students.

Candy, caramel apples and carbonated beverages were eliminated from the lunch counters in the Hyde Park and Steinmetz high schools for three months. In the 67 school days involved, the two schools served 30,320 fewer lunches than usual, and average daily receipts dropped $29.06.

School officials, in abandoning the experiment, stated that at this rate it would cost the Chicago schools more than $300,000 in sales annually. They decided not to abandon their campaign against sweets, however, electing to attack the problem by offering attractive and nutritious substitutes on the regular menu.

A similar experiment, eliminating the sale of candy and caramel apples in elementary schools, did not affect the sales of lunches. As a result, these have been banned from all Chicago elementary schools.

Program designed to use waiting-for-bus time

Students waiting for buses to take them home from the Alief, Tex., elementary school are being involved in organized activities under a new program instituted by the district.

Alief, a relatively small rural district, has classes through the eighth

continued on page 34

Too good to miss . . .

No compromise . . . A debate over the pros and cons of coeducation in the secondary school of Port L'Eveque, France, has been settled. Boys and girls will be allowed to attend sessions in the lecture halls together, but outside, there will be no compromise. A white line, drawn down the middle of the playground area, will separate the boys from the girls.

No superintendent . . . On November 8, the voters of Wahkiakum County, Wash., may abolish the job of county superintendent of schools. They'll vote on the issue that day. It's not that anybody wants to do away with the position, but the district seems to have no choice. The job has been open since last June—but nobody has applied for it.

No students . . . Perhaps the Wahkiakum authorities should get together with those in Verdon, Neb. In the latter town, school authorities have a teacher, but no students. There are only nine children in the district, all of whom have elected to go to private schools. Despite her lack of students, the teacher's $2,610 annual salary is being paid by the board. It was too late for her to find another position when the dearth of students was discovered.

No word . . . Superintendent John B. Smith of Greenwich, Conn., is not a man who finds himself at a loss for words. He was almost stuck at a recent board meeting, though, when he was telling of a situation that seemed to defy description. But Dr. Smith proved himself a resourceful man. We don't think you'll find it in the dictionary, but there can be no doubt of what he meant when he coined the word "administrivia."

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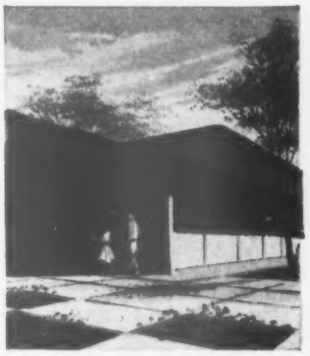

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grade and transfers its ninth through 12th grade students to a neighboring district. The buses, which bring the high school children home through Alief, arrive at the elementary school about half an hour to an hour after that school ends.

Traditionally, children had been turned loose on the school playground to await the arrival of the buses. There was a single supervisor on the grounds and no attempts were made to involve the students in any organized activities.

Under the new program, music, art and Spanish are offered during that after-school hour for any students interested in taking the courses. Teachers from the regular elementary school staff have been hired for the extra hour of instruction.

Those who don't participate in any of the three classes take part in organized athletics on the playing field, or spend their time in a study hall. Every child who rides a bus must take part in some phase of the program. Students who do not ordinarily use the buses can elect to remain at the school for an extra hour.

Teachers not doctors, California board rules

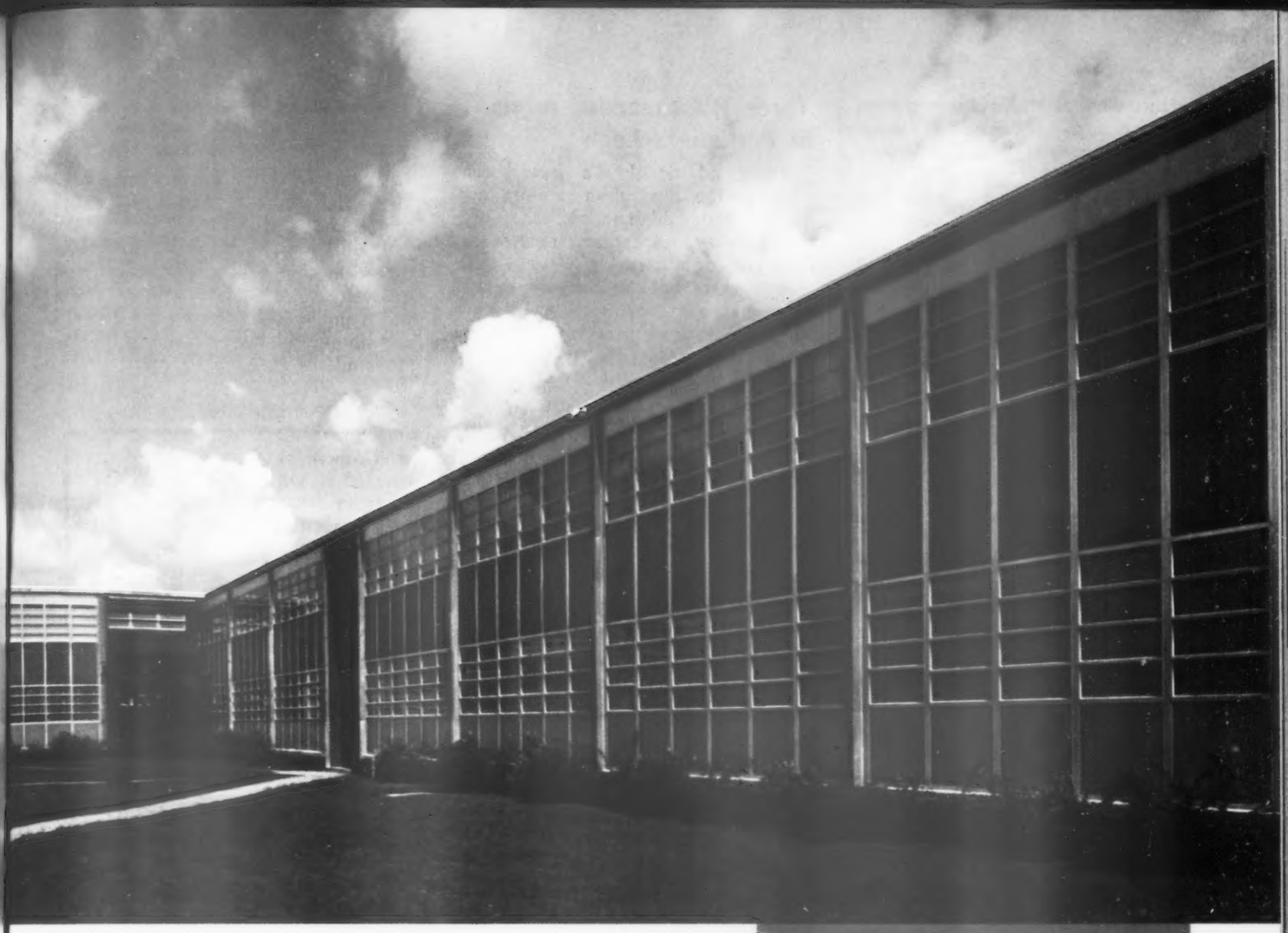
The San Mateo County, Calif., board of education has in effect ruled that teachers are not doctors. The board issued a policy statement denying teachers and other school officials the right to divulge medical, psychiatric and similar "professional data" without written authorization of the person or agency that prepared the material.

The board's policy—which was adopted unanimously—is designed to end any misuse of such information. County Superintendent James J. Tormey agreed that school officials are not qualified to discuss such material with parents. They will be allowed, and expected, to discuss IQ scores, grades, and similar information, he said, because this is their field.

School scholarships pay off four years later

Two scholarships awarded four years ago by the Arlington, Va., schools, are beginning to pay big dividends. The scholarships were designed to encourage bright students to go into teaching.

Started as a PTA campaign, the scholarship idea soon became a community drive. Under its terms, worthy



Alcoa Aluminum Gives Texans a Recess from School Taxes

Houston Independent School District taxpayers are enjoying a long vacation from exterior maintenance costs on the Jesse H. Jones Senior High School. That colorful finish is locked into its Alcoa® Aluminum curtain walls.

Blue, gold and gray tones were put deep into the metal itself by Alcoa's Alumilite* process. Colors remain true, even under a blazing Texas sun. Unlike surface treatments, Alumilite finish is chip-proof against common schoolyard hazards. It needs no upkeep, no expensive painting.

Aluminum easily takes on the clean lines and forms of modern architecture—here some 40,000 lb of complex shapes, 13,000 lb of textured sheet. Its light weight speeds construction and trims costs, while aluminum's long life promises generations of scholars the benefits of its functional beauty.

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. . . THE ARCHITECT'S METAL

students who needed help in getting through college—and who were interested in becoming teachers—were given aid.

Four years ago two students—George T. Cochrane and Barbara Batstone—were awarded the first of the fund's scholarships. Each one received $1,000.

The payoff came early this year when Cochrane and Miss Batstone both joined the Arlington school system as members of the faculty. Miss Batstone will teach the third grade while Cochrane will teach high school chemistry and German and coach the school's cross country track team.

Three R's expanded to six in Portland schools

Three additional R's have been added to the curriculum of Portland, Me.'s, Deering high school. They are responsibility, respect and regard for the rights of others.

A 15-page booklet outlining these points has been distributed to all students. It sets forth a code for student behavior and also lists suggestions for parents to follow.

The booklet is the outgrowth of a dispute between some members of the PTA and students at the school. The PTA members, a year ago, charged shocking moral conditions. A students' committee formed to counteract the parents ended up working together with the PTA members to draw up a moral code for the school.

Among the suggestions listed are prohibitions on drinking and smoking (97% of the parents, it was reported, opposed drinking on the school grounds) and opposition to the formation of any societies or clubs not affiliated with the school or church and service organizations.

Which side are you on?

Every time Kennedy and Nixon visited Pennsylvania this fall, students throughout the state cheered. It had nothing to do with the views of the candidates—as a matter of fact, Republicans cheered mightily when Kennedy spoke and Democrats were joyous over the utterances of Nixon.

How did all this come about? The state department of public instruction was behind it all. It ruled that youngsters attending meetings where presidential candidates appeared could be legally absent from school. Moreover, they got special credit in their civics and social studies classes for attending the rallies.

We understand there's a student movement in Pennsylvania to elect a President each year.

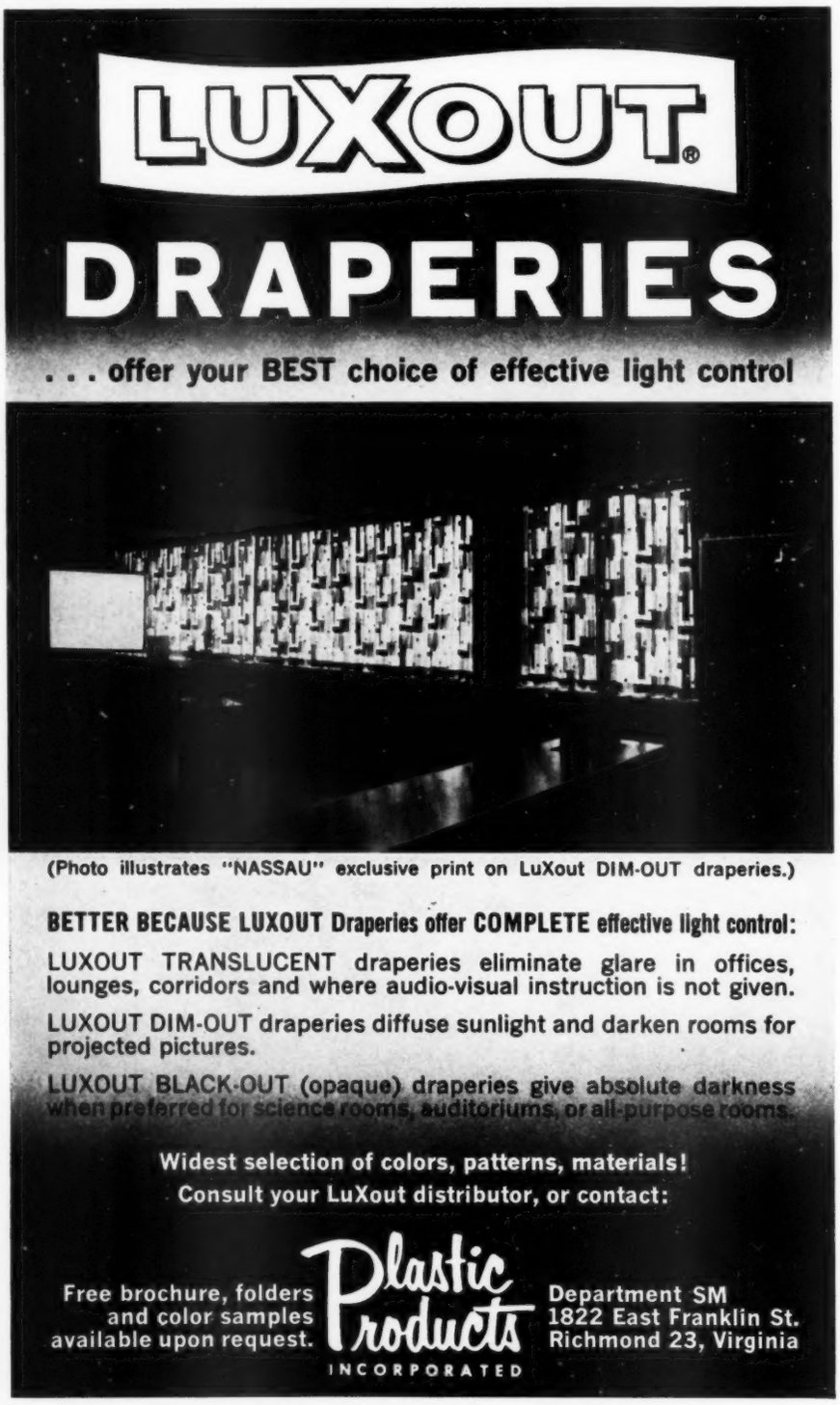
Education lobby called biggest in Washington

When it comes to influencing the course of legislation before the United States Congress, schoolmen are well represented, according to the latest report issued in Washington. However, representation does not always mean success.

The National Education Association showed up in a report in the *Congressional Quarterly* as the biggest single spender among 255 groups registered as lobbying organizations. The NEA spent $77,913 in the first six months of this year. This was $15,000 more than any other group and represented a rise of $21,000 in the organization's spending over the same period during the previous year. (A half-year report is not yet in from the American Legion, but indications are that its efforts may rank almost as high as the NEA's.)

Most of the NEA's expenditures were used to back legislation for school aid. The bill supported by the

continued on page 38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How Eastern's Star venetian blinds saved students' lives and school property!

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NEA died in the House Rules Committee. Interestingly, the second largest spender—the AFL-CIO—also participated in the unsuccessful drive to pass school aid legislation.

Rochester students are brushing up on education

Elementary school students in Rochester, N.Y., are really brushing up on their education. One hundred of them were involved in a special experimental class designed to teach them how to brush their teeth correctly.

A dental hygienist, working with the Eastman Dental Dispensary, led the group of first and second graders in the program designed to show children the proper way to brush teeth. (The American Dental Association recommends brushing down on the upper teeth, up on the lower teeth.)

The unique aspect of the three-week course was that students used brushes on the *outside* of their mouths. Each outside-the-mouth session lasted 20 minutes.

When students showed proficiency at scraping the brushes along their cheeks, they were allowed to graduate to full-scale tooth brushing in the prescribed manner.

The method of teaching seemed to work. Three months after the end of the class, the 100 students were tested on their brushing habits. Seventy-five still used the proper methods.

School board and PTA clash over organization

A clash between the Madison, Ill., school board and the town's Parent-Teacher Association has resulted in a ban on the parents' use of school buildings for meetings.

According to Board President John N. Bellcoff, the board adopted the prohibitive policy because it opposed a systemwide parent-teacher organization, believing instead that each school should have its own group.

The board's reasoning stems from a feeling that the problems of one school often have no relationship to problems of another, and therefore can be better handled by individual school organizations.

The board's decision, according to PTA President Mrs. Edward J. Byrne, culminates a dispute which began in December, 1958, when members of the town's junior high school PTA voted to take in parents of children in elementary schools. The PTA has since accused the administration of prohibiting teachers from participating in the systemwide organization.

Commenting from the outside, an educational leader, also a parent, expressed concern that the real question was not how the PTA was organized—he tended to agree with the school authorities on this question—but the possibility of school board censorship of parent activities, if it can dictate the form the PTA is going to take.

Pittsburgh cleans up in economy drive

Pittsburgh's schools will have more money for other operations when new maintenance rules voted by the school board go into effect January 1. Under the rulings, the basic unit for doing a maintenance job will be cut from 30 to 24 minutes. The new schedule will affect some 325 cleaning women.

The 30-minute working unit was a holdover from the days when "Pittsburgh was considered a dirty city," board members explained. Under the new set-up, fewer maintenance work-

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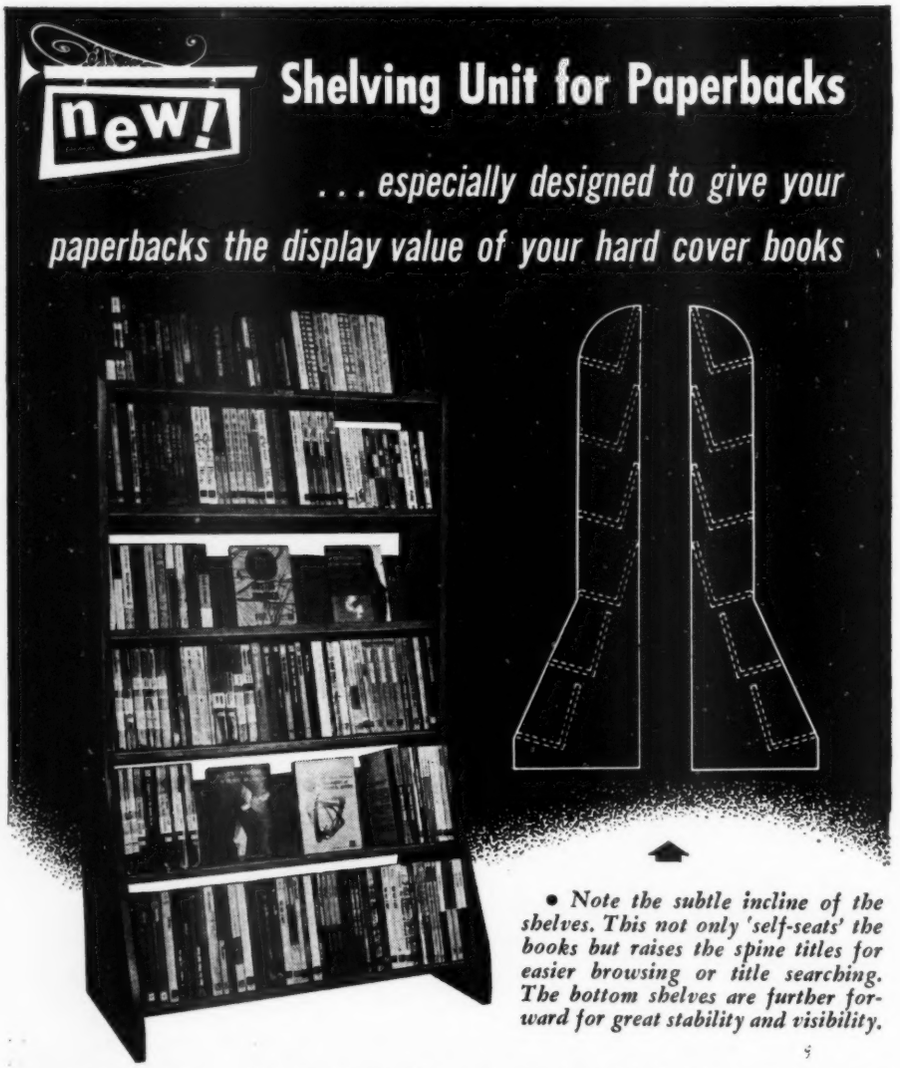

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more books in less space with better display value

Bro-Dart presents a gracefully designed shelving unit for paperbacks offering both valuable and attractive accommodations for the ever increasing number of paperback editions. The new shelving unit is architectured for the greatest economy in space. It fits flat against the wall or the units can be placed back to back in an aisle without becoming bulky.

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(Circle number 708 for more information)

ers will be expected to clean larger areas of the schools.

The Pittsburgh economy drive will not end with maintenance operations. The board is studying its transportation program with an eye to eliminating much of the $100,000 item from the budget.

The town's suburbs were blamed for much of the school transportation costs. Said Board Member Stanton Balfour: "In the suburbs they don't want to build sidewalks for their children to walk safely to school. They just add a few more school buses."

One question to be answered is whether it's cheaper to bus students living outside the city limits, or to pay tuition to send them to other districts.

How's that?

An Arizona law designed to bring more income to school districts is actually costing Tucson money, early reports indicate.

Under the new law, persons coming into the state for less than a year must pay tuition for their children. Tucson's fees this year are $505.99 for elementary school children and $742.70 for secondary school.

The trouble is, so much extra clerical help will be needed to keep track of students entering the school, that the district will actually lose money, according to Superintendent Robert Morrow.

American Legion okays use of Russian magazine in school

Reversing its earlier stand opposing the use of the Russian magazine USSR in the schools of Sioux Falls, S. D., the local American Legion post withdrew its earlier recommendation that the magazine be prohibited. The Legion post had objected to making Russian literature available through the schools.

In their apology to the school board, representatives explained that the post had acted hastily on the basis of insufficient information in their first action. Only after voting their objection did post members find that the magazine was not freely available to all students in all schools. In fact, only four copies, of USSR were being used in one school, by one instructor, teaching one class. What's more, he had carefully explained to his students beforehand that the magazines were examples of Russian propaganda.

The magazine is not available in the school library, nor does the school sub-

continued on page 42

EVEN CHILD-MADE BLIZZARDS CAN'T PENETRATE WEATHERALL WAX

What are child-made blizzards? Ask any maintenance man. He's seen enough snow flying from stomping boots to match any nature-produced blizzard. And this tracked-in snow can become a problem if floors aren't adequately protected.

Water-resistant Weatherall Wax won't water spot. When floors become wet, a simple mopping restores the high sheen. Slip-proof, built-in preservative that stops germ growth and quick drying (with no tackiness) are just a few of the other virtues of Weatherall Wax. See our representative, the Man Behind the Huntington Drum, for details. • Huntington Laboratories, Huntington, Indiana, Philadelphia 35, In Canada: Toronto 2.

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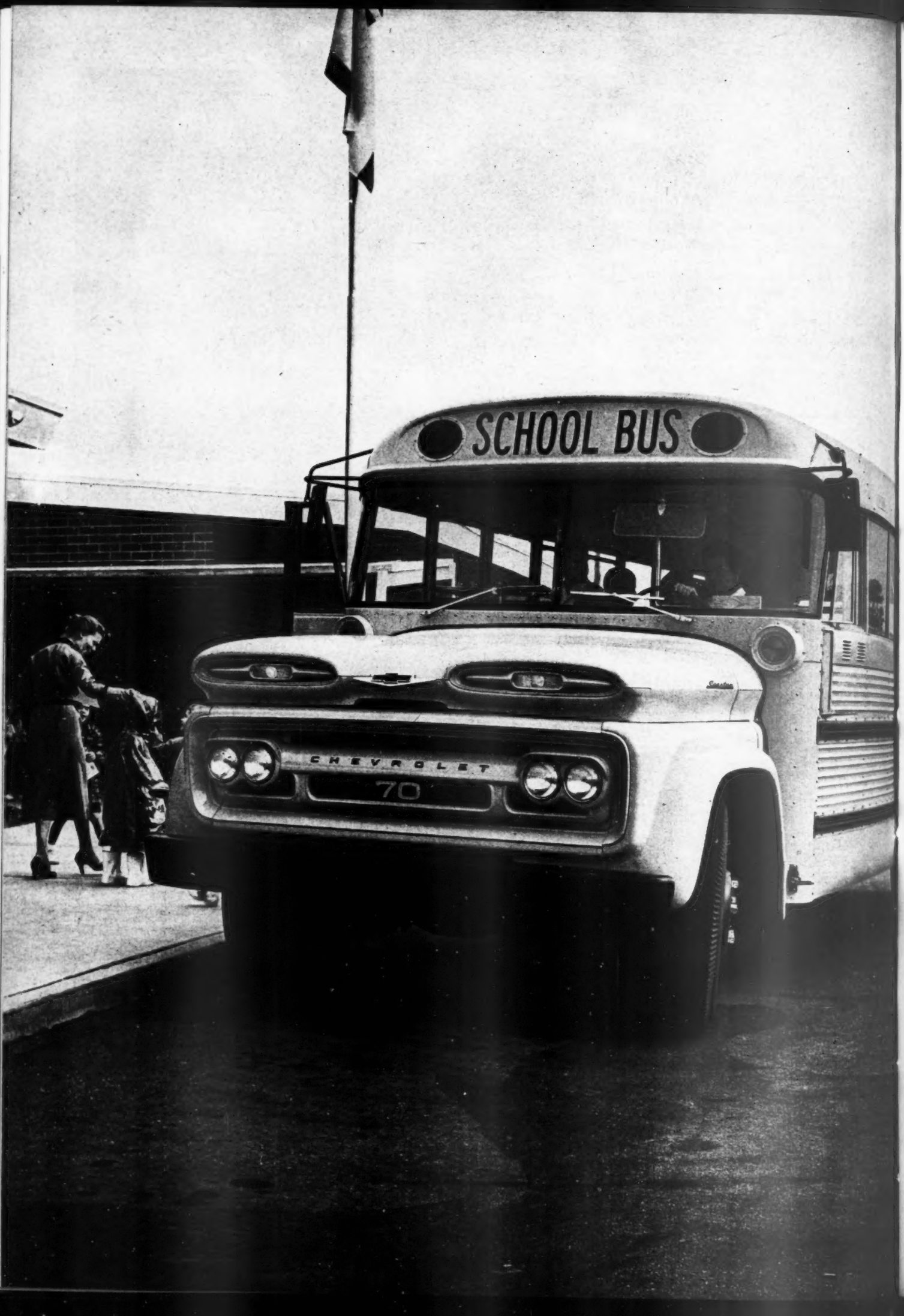
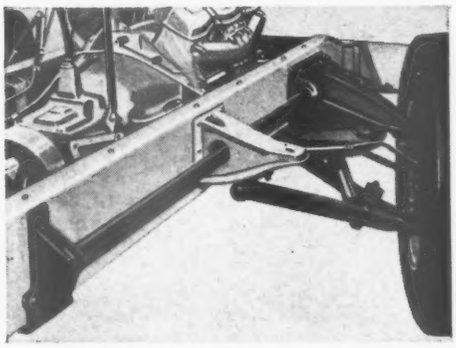

SCHOOL BUS
CHEVROLET
70

'61 CHEVROLET SCHOOL BUS CHASSIS—PROVED SMOOTHEST, SAFEST, SAVINGEST!

In the year since Chevrolet hit the highways with the most advanced chassis design in industry history, nearly 300,000 Torsion-Spring Chevies have gone out to show their stuff. And Chevrolet's years-ahead ride has opened a new era in transportation. The combination of unprecedented driver and passenger comfort with cost-cutting ruggedness and reliability has brightened the tightest budget picture wherever Chevies have served. Even more important is the extra safety that stems from remarkable new roadability, with safe, sure, easy handling under all road and load conditions. Emergencies are less apt to arise and easier to cope with when they do, especially with the drastic reduction in driver fatigue the Chevrolet chassis delivers. For 1961, numerous improvements and refinements give the Chevrolet chassis still more stamina and economy—it's a better-than-ever answer to your school transportation needs! Your Chevrolet dealer will be glad to give you the full details at your convenience. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



Here's why Chevrolet's years-ahead Torsion-Spring Ride is winning wide acclaim on busy school bus schedules everywhere: Independent front suspension floats each wheel over bumps with minimum effect on the chassis. Rugged control arms and heavy-duty, low-friction spherical joints guide the wheels firmly and precisely. And resilient torsion-bar springs of highest quality alloy steel swallow up road shocks with scarcely a trace. The net result is a new sensation in riding and driving ease, a combination that spells shorter trip times, greater safety, and longer life for chassis components and body.

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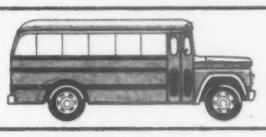

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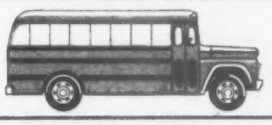

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Model S6202
Max. GVW 21,000 lbs.

48 to 54 Pupils
Model S6402
Max. GVW 21,000 lbs.

54 to 60 Pupils
Model S6702
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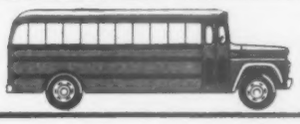
Model S7702
Max. GVW 23,000 lbs.



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Model S7902
Max. GVW 23,000 lbs.

CHEVROLET FOR '61

CHEVROLET

SCHOOL TRANSPORTATION AT ITS BEST!

(Circle number 713 for more information)

scribe to it. The copies being used had been obtained privately by the instructor and one of his students.

Board members learned that the Russian magazine reaches the United States as part of a cultural exchange program but that our equivalent, "Amerika," is not freely distributed in the USSR.

In commenting upon the incident, board member Richard Flint said, "By pointing out Russian propaganda, we can strengthen democracy in our students' minds." The Sioux Falls American Legion post is in complete agreement with this view.

Four thousand Clevelanders get double-shift teachers

Fifty-six teachers in Cleveland were assigned to handle an elementary class in the morning and another in the afternoon when Superintendent Mark C. Schinnerer announced in September that once more he didn't have enough qualified teachers to go around.

So Schinnerer enlarged the dual shift plan which had been adopted by the Cleveland board the year before.

Working with the dual assignment teachers were non-professional assistants—56 of them, too—who were hired for classroom housekeeping, clerical tasks and other non-educational duties.

The new chapter in Cleveland's troubles forced 112 classes to share half that many teachers. It put a total 4,000 pupils on reduced schedules, due to lack of personnel, compared to the 1,900 put on shifts for the same reason in the fall of 1959.

The shifts—from 8:30 to 12, from 12:30 to 4—provide a pupil with 3½ hours of school a day instead of the system's regular five hours. The teachers, presiding over classes for seven hours instead of the usual five, receive 25% on top of their regular salary.

The aides, mostly housewives, are high school graduates and, on the average, have 18 months of college education. The median age is 38, although the youngest is 19 and one is a retired teacher who is 72. They receive $237 a month.

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Library — School — Office — Hospital . . . will all find uses aplenty for Gaylords' versatile new sloping-shelf stands. Compact, sturdy and light-weight, in 3- or 6-shelf models, each makes a handsome display for new or selected titles, or reference works (see above) . . . also time-saving as work room stand that puts titles at slanted easy-to-read angle for cataloging and processing.

Equipped with 4", ball-bearing, swivel casters, they maneuver smoothly and silently with loads up to 56 and 112 books.

"SPACE-MASTER" DIMENSIONS — *No. 173 (3-Shelf) — 43" high, 28" long, 13" deep. Clearance — mid. 11½", bottom 14½". *No. 176 (6-Shelf) — 40" high, 28" long, 20" deep. Clearance — same as No. 173.

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(Circle number 725 for more information)

Male teachers more stable, less friendly, study claims

A research team headed by a University of Texas professor has found that male teachers are emotionally more stable than women, but the latter are more friendly, stimulating and democratic.

The research team, headed by Dr. David G. Ryans, studied 6,000 teachers in 1,700 schools throughout the nation. They found that high rated teachers were most often found in large schools and medium-size cities.

Single teachers were rated higher than married teachers in verbal intelligence and were found to be more businesslike in classrooms. But their married associates were said to have greater emotional stability and did a better job in stimulating students.

In general, the better teachers were found to have a strong interest in literature and the arts, took part often in school and outside activities.

Nine architects chosen to draw standard plans

Nine major schoolhouse architects operating in New York have been chosen to draw up standardized school building plans for the state.

The architects will be paid fees ranging from 3.6% of the construction cost on the largest building to 4.2% for the smallest. Each of the firms is designing a different type of building. Thus, plans will be drawn for structures of different grade levels, sizes and sites.

The use of the plans by school districts will be optional.

The IBM Electric: Its beauty is just a bonus

There is more to the IBM Electric than its good looks. Here is beauty combined with precise function, the result of the most thorough approach to typewriter development ever devised.

It is one of the most perfectly engineered products in the world. Every part is a little stronger and better than it has to be. As a result, you can expect less "down time," schedules can be maintained, and students need not feel the demoralizing effect of wasted classroom time.

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IBM

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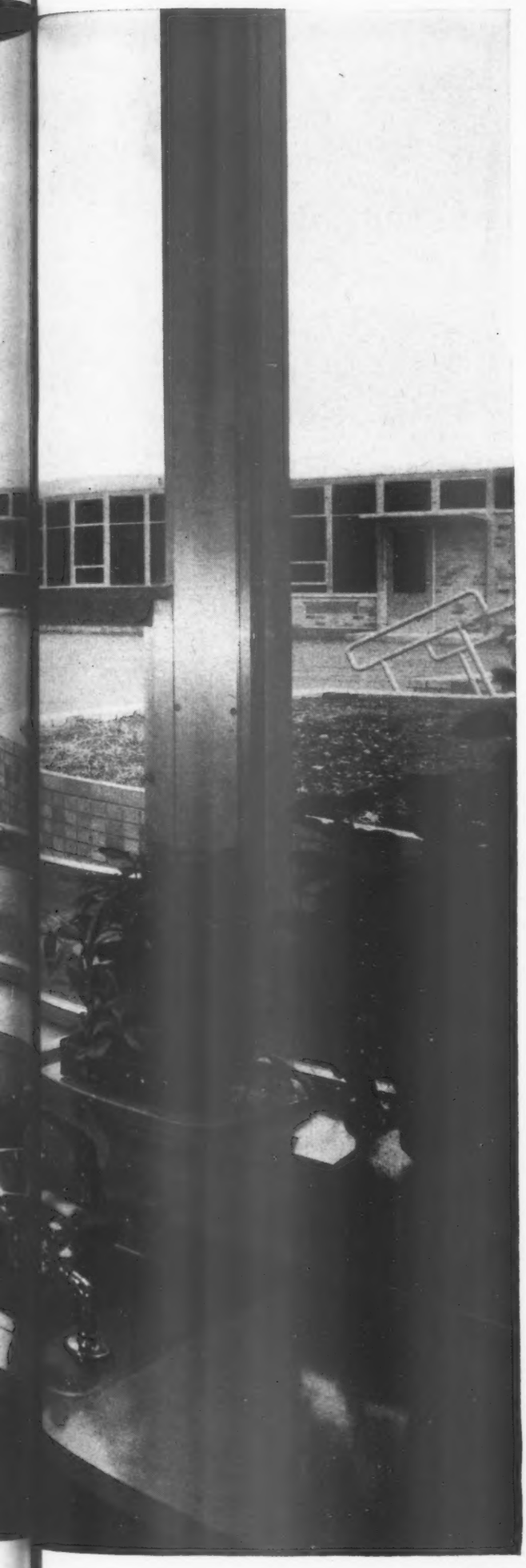

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Contractor: Holt & Reichard, Norwood, Ohio
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This is Swifton Primary School, Cincinnati, Ohio. It's a school that's easy on the eyes two ways. Its glass is PENNVERNON® GRAYLITE™ "14"–PPG's neutral gray, glare-reducing, heat-absorbing heavy sheet glass. GRAYLITE "14" takes the strain off children's eyes and keeps classrooms much cooler in the summer. Even though its neutral gray color reduces solar glare, it still lets plenty of light come through. When you look through GRAYLITE "14" from the inside, you are unable to detect any variation in natural outdoor colors. Any way you look at it, the wide-open, inviting look of glass makes this school easy on the eyes.

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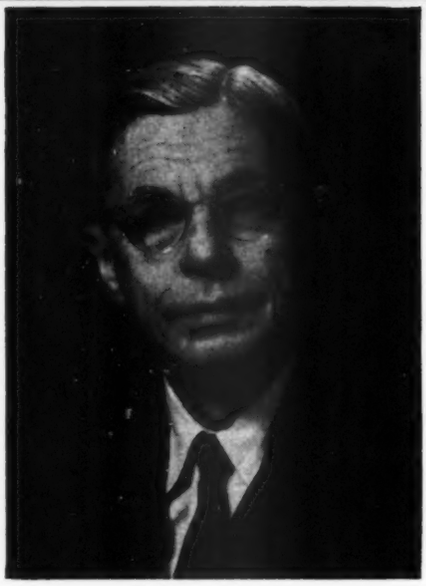


CONANT REPORTS ON

THE JUNIOR HIGH SCHOOL

After completing his report on the American high school almost two years ago, Dr. James B. Conant turned his attention to the junior high. The results of his study have just been published. Here is a summary of his findings.

■ ■ ■ Just days after he completed his report on the American high school, Dr. James B. Conant launched a major new research project—a study of this nation's junior high schools.*

Dr. Conant does not try to point a whole new way for education in the United States. As a matter of fact, much of what he says echoes what leading schoolmen have been preaching for many years. The greatest contribution that Conant makes to education is in summarizing thought on the junior high school and in setting a bottom limit for an adequate program.

The job of the junior high

The basic job of the junior high school, as Conant sees it, is to minister to two transitional needs of the students. First, it must help them make the emotional, social and physical adjustments that are required to bridge the gap between childhood and adulthood. Second, it must help them move from the child-centered program of the elementary school to the subject-centered program of the high school.

Can most junior high schools accomplish these two tasks? Conant says "yes," provided they meet minimum standards of size. He sets these minimums as 125 pupils in each of grades seven and eight or, in a separate three-year junior high school, a total enrollment of 750.

Conant has something very important to say about the teaching in the junior high school. "Grades seven and eight," he writes, "should not be regarded as a training ground for senior high school teachers.

"Recognizing the special competence needed by

*RECOMMENDATIONS FOR EDUCATION IN THE JUNIOR HIGH SCHOOL YEARS by James Bryant Conant. Educational Testing Service, Princeton, N. J. 48 pages 50¢.

ABOUT THIS SPECIAL SM REPORT

When it was announced early this year that Dr. James B. Conant would release his study of the junior high school sometime this autumn, the editors of **SCHOOL MANAGEMENT** *decided to prepare this special study. We did so for two reasons.*

1. It was safe to assume that the new Conant report would receive tremendous attention from educators and laymen throughout the United States.

2. It seemed reasonable to assume that it would be delivered with the same "bare bones" simplicity as the 1959 study of the high school.

In late June of this year, a group of superintendents, educational consultants and architects were brought together to discuss the junior high school program and its implications for schoolhouse construction.

A report of that conference starts on page 88. It is interesting to note that although Dr. Conant's recommendations were then unknown, these men are in basic agreement with him on many—but not all—essentials of the junior high school program. This should not be surprising since, as Conant himself says, "My comments are based on what I have seen in visits to schools and heard from the teachers and administrators with whom I have met."

teachers in these grades, school boards should do all in their power to maintain the status and the prestige of the professional staffs in grades seven and eight and to create working conditions that will make teaching in these grades a satisfactory and rewarding experience."

Finding a good junior high school teacher is not easy. Conant sees her as a person who has the prime requisite for elementary school teaching (an understanding of children) plus the major characteristic of a high school teacher (considerable knowledge of at least one subject).

Who determines policy?

Conant's report is directed basically to the school boards of the nation, as well as to the professional educators and interested citizens who will read it over the board's shoulder.

Because this is his audience, Conant makes a plea in his introduction for delineation of the duties of the school board and the administration. He says, with complete candor: "Broadly defined, the function of the board is to determine policy; the function of the administrative staff is to implement policy. More specifically, any decision affecting the budget is clearly within the province of school board members. Except for money matters, the line between policy making and administration is often difficult to draw, but I believe strongly that this line must be drawn."

Conant makes 14 recommendations on the junior high school. Each is divided into two parts: a policy recommendation for the board; and a more detailed explanation for the administration. Here are his 14 points:

RECOMMENDATION I
Required subjects

All pupils in grades seven and eight should be required to take English (including heavy emphasis on reading skills and composition), social studies (including emphasis on history and geography), mathematics, and science. Instruction should also be provided in art, music, and physical education. Boys should have instruction in industrial arts and girls in home economics (see Recommendation X). Academic subjects, Conant believes, should consume from 60% to 70% of weekly classroom time.

RECOMMENDATION II
Mathematics and foreign language

Dr. Conant returns to the urgent appeal in his high school report for early identification of very able pupils. These able pupils should start algebra (or one of the new brands of mathematics) in grade eight. In addition, most of the pupils should start the study of a modern foreign language in grade seven. He cau-

tions the school board to be prepared to finance continuing instruction in grades eight to twelve in the same foreign language. This six year sequence, he states, should provide a language competency that will permit a high school graduate to read a foreign newspaper and discuss its contents fluently with the native inhabitant of another country.

RECOMMENDATION III
Basic skills

Dr. Conant minces no words: Reading must be continued instructionally as long as pupils can gain from the instruction. He offers these standards: A pupil with average ability should read at or above grade level in junior high school. Superior pupils should read considerably above grade level. By the end of grade nine, even the poorest reader should read at least at the sixth grade level. Pupils in grades seven, eight, and nine who are reading below grade level expectancy should have special provisions made for them in addition to regularly scheduled classes in English. Because he believes the ability to read is imperative for success in secondary school, this recommendation is perhaps the most forcibly stated item in the whole Report.

RECOMMENDATION IV
Extra-class activities

Conant urges extra-curricular activities that are relevant to the junior high school student: Musical and dramatic activities, assembly and homeroom programs, interest clubs, intramural athletics and student council.

RECOMMENDATION V
Block-time and departmentalization

On the controversial issue of block-time teaching, Conant takes sides in favor of a situation in which one teacher has the same pupils for two or more periods, especially in English and social studies. Otherwise, he states, grades seven, eight, and nine should be departmentalized. He cautions that a thoroughly competent and enthusiastic teacher is essential for a block-time situation. The advantages: At least one teacher is able to know his pupils well and can counsel them with the same familiarity they enjoyed at the elementary level. In the absence of block-time, he suggests that special efforts should be made to provide this personal attention through the homeroom teacher or guidance personnel. Finally, to avoid confusion, he states, "Though I am not opposed to experimentation with the core approach, I must make it plain that my advocacy of block-time teaching does not presuppose an endorsement of core teaching."

RECOMMENDATION VI
Flexibility in schedule

The seven-period day is Mr. Conant's recommendation for the junior high school. The extra period is needed, he believes, to permit flexibility for scheduling remedial work in reading and arithmetic for those who need it, and to provide foreign language instruction for those who can benefit from it. He presumes that the pupils will be kept busy during all 35 periods of a week and says that no provision need be made for study halls, especially in grades seven and eight.

Of the newer experiments in scheduling, he says: "There are, of course, other ways out of the strait jacket of the six-period day. Some schools are experimenting with the length of the periods for different subjects, others with the number of times a week different subjects meet. Still other school systems are expanding summer school programs to include junior high school pupils. These developments will bear watching."

RECOMMENDATION VII
Challenging all pupils

Dr. Conant believes in some form of ability grouping and points out that he has found considerably less objection to the concept in this study than he experienced three years ago in his study of the high school. He suggests three groups in academic courses, with the bulk of the pupils in a large middle group. He recognizes the effectiveness of grouping by reading ability and warns that grouping of any type assumes differentiated materials and teaching methods at the various grade levels.

RECOMMENDATION VIII
Guidance and testing

As in the first Conant report on the high school, he urges a full-time guidance specialist, or the equivalent, for every 250-300 pupils in grades seven and eight. To this he adds a caveat: "It is by no means easy to find competent guidance personnel. Obviously it is better to delay the expansion of the staff than to employ unsatisfactory people." At the same time, he states that he is not enthusiastic about sequential, regularly scheduled, group guidance courses, except, perhaps, where students plan to drop out in grades nine and ten. For these youngsters, a form of group guidance in vocational opportunities has much to recommend it.

RECOMMENDATION IX
Homework, marking and promotion

A junior high school pupil should have from one hour of homework a day in grade seven to two hours a day by grade nine—but it should be meaningful homework, not drudgery. In the area of marking, he points out that junior high school pupils are still trying to master basic skills. Thus, while *effort* should be recognized, it is not a sufficient criterion for marking. He believes in the policy of nonpromotion, or retention, with each case viewed separately. He urges extreme care and discrimination in retention, but also points out that unless a child has mastered the necessary skills in grades seven and eight, he is probably doomed in the academic subjects which follow in grades nine to twelve.

RECOMMENDATION X
Program in grade nine

Conant sees the ninth grade to be pivotal in determining the track that any given student will take. He points out that many will keep up their interest in art, music, and industrial arts, but also commence an elective sequence that will lead to the development of a marketable skill. The college-bound, or those interested in academic subjects, may continue their interest in non-academic areas, but will also begin an elective sequence in foreign languages and algebra, if they have not

"The ability to read is imperative in secondary school."

done so before. In the case of science, Conant points out (see Recommendation I), that by studying general science in grades seven and eight, the ninth grade pupil can begin biology or a special physical science course. Interestingly, he suggests that typing for personal use might well be included in the ninth grade program, too, if not before.

RECOMMENDATION XI
Minimum special facilities

Conant is categoric as to what special facilities must be provided for grades seven and eight. He calls for:

1. A well-stocked library *(see Standards for School Library Programs, American Library Association, 1960).*

2. A gymnasium with locker rooms and showers.

3. Specially equipped home economics rooms for girls and industrial arts rooms for boys.

4. An auditorium or assembly space for at least half the student body.

5. Cafeteria space for at least one-third of the student body.

He emphasizes that these are *bare minimums.* He says that special art, music and science rooms are desirable, or that portable equipment be provided if the rooms themselves can't be had. He points out that too many well-stocked libraries are practically empty during the school day because pupils are fully scheduled with classes. He urges that these facilities be used as a part of regular class activity and that audio-visual aids be tied in with the operation of the library. In areas with a mild climate, the need for the gymnasium can be questioned and the feeding program can also be conducted out of doors. Realistically, in the case of the auditorium, he suggests that it be combined with the cafeteria in those cases where the facility will not be used extensively enough throughout the course of the regular school day.

RECOMMENDATION XII
Coordination of subject-matter instruction

Here Conant uses his bold face type again to emphasize his recommendations. In his own words, "Without question, I consider the lack of what educators call articulation one of the most serious problems in many school systems. . . . The solution of this problem calls for leadership cutting across school and grade lines. In small systems, there may be as few as one person responsible for the coordination of all subjects; in larger systems, there may be full-time personnel for each subject. These coordinators of instruction *must* be competent in the subject fields for which they are responsible." The unified school district, covering K-12, facilitates articulation, he points out.

RECOMMENDATION XIII
Professional staff and teacher load

What produces a balanced staff for grades seven to twelve? Conant calls for 50 professionals for 1,000 pupils as the *minimum acceptable ratio.* As for teacher load, he says the reasonable limit is five teaching periods per day involving 125-150 pupils per day. English teachers, he urges, should be responsible for no more than 100 pupils. When it comes to grades seven and eight, Conant says, "It is plain that *more* teachers are required for 1,000 pupils than in grades nine-12 if the teaching loads are kept equal." A three-year junior high school, he points out, may well have a minimum ratio of 59 professionals for 1,000 pupils. Balancing the load between junior high school and senior high school teachers, he believes, will improve morale of teachers in grades seven and eight and will stop the exodus of teachers from these critical levels.

RECOMMENDATION XIV
Leadership role of the principal

"The difference between a good school and a poor school is often the difference between a good and a poor principal," says Conant. He suggests a full-time assistant principal at the secondary level for every 750 pupils, and a clerk or secretary for every 250 pupils. And, again, he emphasizes that his figures are minimal.

More do's and don'ts

Conant warns that the three-year junior high school should not become a replica of the senior high school with its attendant social pressures. For example, he abhors interscholastic athletics and marching bands in the junior high and points out that graduation ceremonies with diplomas and cap and gown have no place at this level.

Finally, he returns to what he calls "the three basic ingredients necessary for good schools," a proposition he emphasized in his earlier report two years ago: *First,* a school board composed of honest, intelligent citizens who know the difference between policy making and administration; *second,* a first rate administrative staff—both superintendent and principals; and *third,* first rate teachers.

The importance of the local school board, he emphasizes, cannot be underestimated. His urgent insistence on this point after visiting hundreds of school districts is highly significant. One can only conjecture that he has seen demonstrable evidence of educational failure when a community fails to elect its best people to school boards posts. **End**

SM's SPECIAL JUNIOR HIGH SCHOOL REPORT BEGINS ON PAGE 88. ►

How to improve instruction with teaching teams

Robert G. Andree
Superintendent
Rich Township High School
Park Forest, Ill.

■ ■ ■ If you are looking for ways to improve staff utilization in your schools, you can be sure of one thing: there is no rigid formula which will magically help you make better use of your teachers.

Some schoolmen are certain that a return to the three R's is the answer. "We'll get more mileage out of our teachers," they say, "if we get them all back into individual classrooms." Others, like Dr. J. Lloyd Trump, have suggested radical changes in class size and class-teacher relationships to achieve the same end. These are the extremes. But is there a middle way?

The many experiments with team teaching now underway in schools all over the country are a case in point. Some (as in Norwalk, Conn., and Lexington, Mass.) are being conducted at the elementary level; others are directed toward improving the nation's secondary schools. But all have individual, unique features of their own. These range from status titles and salary differentials for team leaders to a conscious teaming of master teachers with beginners.

Team teaching can help take some of the curse off the present teacher shortage in two ways. Skilled instructors can become available to greater numbers of students; and experienced teachers paired with newcomers can make an effective contribution to a district's in-service training program.

There are certain advantages, however, to using teams of teachers for classroom instruction. While a single teacher lectures to as many as three or four classes at a time, the other team members are free to prepare the next day's lesson or to hold student conferences. Large-group sessions usually alternate with small-group seminars and individual study periods.

The Trump proposals

How large should these groups be? How much of the school day should be allotted them? How should teams be organized? There are no cut-and-dried answers.

One of the first to say so was Dr. J. Lloyd Trump, associate secretary of the National Association of Secondary School Principals. His work as director of the NASSP's Commission on the Experimental Study of the Utilization of the Staff of the Secondary School is generally credited with sparking today's widespread interest in team teaching. In his book, "Images of the Future," Dr. Trump made many predictions about changes

Schoolmen in Park Forest, Ill., are convinced that their approach to team teaching pays educational dividends. Here is the way teachers work together in the district's high school to do a better job.

in our schools during the years ahead. Among other things, he declared that the student's time would be split among large group instruction (40%), individual study (40%) and small group meetings (20%). He said further that the instructional staff would be made up of teacher specialists, general teachers, instruction assistants, clerks, general aides, community consultants and—in some cases—staff specialists. *(For more about Dr. Trump's proposals concerning the organization of the secondary school, see SM, Apr. '60.)*

But he made no bones about the fact that his proposals were not to be taken as iron-clad dicta, something that many of his critics have tended to overlook. The purpose of the Commission's study was "*not* to establish a final plan for the school of the future." It was intended, instead, to establish an experimental climate designed to help schoolmen make better use of the inadequate numbers of teachers.

The Rich Township plan

While some educators have taken issue with Dr. Trump over his specific recommendations, others have gone quietly ahead, exploring the potential of team teaching in their own schools. In Park Forest, Ill., schoolmen have been working with the University of Chicago since 1956 to find ways to improve the quality of education in Rich Township High School. High on their list of recommended methods to effect improvement are teaching teams used for instruction in American history, mathematics, typing and a combined ninth-year English and social studies program.

The general pattern of their team approach resembles that outlined by Dr. Trump, but it departs from it in many details. This, however, is unimportant. What is significant is that the team teaching plan developed at Rich Township High School works for that school. It works so well, in fact, that the district's second high school, to be opened in 1961, is literally being built around the team teaching concept. *(For more about this school, see SM, Oct. '60, page 106.)*

In order to learn more about teacher teams in Rich Township High School District, SCHOOL MANAGEMENT editors traveled to Illinois to question Superintendent Robert G. Andree on the subject. In this tape-recorded interview, he describes how teams are being used, what gains have resulted and what hopes he holds for the future of the team teaching approach.

Q. *Dr. Andree, teaching teams have been established in many schools for a number of different reasons. What is the major purpose of your team teaching program?*

ANDREE: We are trying to stimulate our students' interest in learning. Everything else is secondary. We want our teachers to guide youngsters working in small groups on subjects that have come alive to them.

Q. Do you feel that the team approach is the only way this can be done?

ANDREE: Not at all. There are some outstanding teachers who simply cannot function as team members. There is no reason why they should not be permitted to continue teaching individual classes. As a matter of fact, I don't think any teacher ought to work on a team basis all day. He should have an opportunity to teach single classes, too.

Q. Does that mean you've adopted J. Lloyd Trump's proposals about how classroom time should be apportioned—40% to large group meetings, 40% to individual study and 20% to small group sessions?

ANDREE: Not necessarily. Much of what Trump has suggested is extremely helpful and we have incorporated it in our program where possible. But in those areas where we feel his proposals do not apply, we have simply bypassed them in favor of solutions of our own. How you structure class time, for example, depends entirely upon the needs of the subject and the needs of the pupil. In

"Buzz" sessions are small groups led by well-prepared student leaders.

There are no hard and fast rules. You play it by ear as your program develops.

the humanities, Trump's breakdown of large group, small group and individual study time would work very well. The sciences and mathematics, though, are another matter.

I don't think you can set down hard and fast rules for structuring time in every subject. This same freedom in approach applies to team teaching as a whole. You must develop your program without preconceived notions and play it by ear.

Q. How large are your teaching teams?

ANDREE: They range between two and four teachers. Teams of five become a little unwieldy; even four is a little large. We've found that three teachers can work together very well. Three-member teams are particularly suitable for a new teacher who can benefit from the guidance of the two experienced associates.

Q *What qualities do you look for in a team leader?*

ANDREE: If by team leader you mean one teacher selected to head the group, at slightly higher pay, our program doesn't operate that way. We do have four division heads who, in effect, are the developers of curriculum in their areas. The humanities; science and mathematics; health, physical education and safety; and the related arts comprise our four divisions. But we don't have a head teacher and some subordinates on each team. Our teachers are associates, equal in ability, purpose and status. We think this is important, since they don't have to scramble for status when they know they are all equal.

Q. But if one teacher is a better lecturer than the others, wouldn't he probably be assigned to do the major portion of large group lecturing for the entire team?

ANDREE: That's something I would seek to avoid; it's the least important part of the team approach. It is more important to learn what the needs and abilities of your pupils are and then to provide an atmosphere that will permit their skills to grow and develop. This is why teaching teams are so effective. Not because one man can stand before a large group and deliver a lecture while all the students dutifully take notes. But because the group can readily be broken down into small "buzz" sessions during which youngsters can pursue a subject on their own while a teacher sits in to guide them.

Q *Are you suggesting that large group lectures be eliminated?*

ANDREE: By no means. But I do think that their real value has been misunderstood. The basic purpose of the lecture is not to transmit knowledge but to transmit skills: the skill of selective listening; of useful note taking; of outlining and organizing. It won't be long before most lectures will be presented on tape while all the teachers of a team circulate through the classroom to work personally with students on developing these skills.

Q. Your lectures, then, are simply briefing sessions during which background or introductory material is presented?

ANDREE: Yes, we use them to open and close sessions. In between, we conduct small group discussions and buzz sessions. Of course, a staff member who is not part of the teaching team but is expert in some aspect of the subject under study, occasionally addresses combined classes. He may give a formal lecture or he may simply serve as a discussion leader after the students have read a particular book, for example.

Q. Do you try to assign individuals with specific skills to each teaching team?

ANDREE: We engineer a team on occasion, but we've found that the willingness of enthusiastic teachers to serve is almost enough to guarantee the success of the effort. Ideally, we prefer to form teams on the basis of teacher initiative. For example, four teachers requested permission this year to work together in an area combining English and social studies at the ninth grade level. This was their idea and they developed it in conferences with the head of the humanities division to formulate plans and purposes. They work from the same office, are in the same classroom cluster and have one pe-

but a way to improve instruction."

riod a day in which to sit down together and plan their team approach. In addition, each teacher has a daily study period of his own.

Q. How many classes does this team handle?

ANDREE: Sixteen a day. This is not designed to be a money-saving device but a method of improving teacher effectiveness; something in which I am much more interested.

Q Let's turn for a moment to the buzz sessions you mentioned earlier. What are they?

ANDREE: Our large group meetings break down into small student groups, or buzz sessions, immediately after the introductory lecture material has been presented. Each of these sessions is conducted by a *student* leader who has prepared himself thoroughly for the assignment. He is responsible for leading discussions, assembling reference materials and assigning other members of his group to dig up such materials for the next day's meeting.

Q. How many students are involved in each buzz session?

ANDREE: Our large group meetings, usually involving some 90 students, generally break down into 11 sessions of eight or nine pupils each. Each small group works by itself within the same classroom. At least two teachers are always moving from group to group to set them on the right track if they have strayed too far.

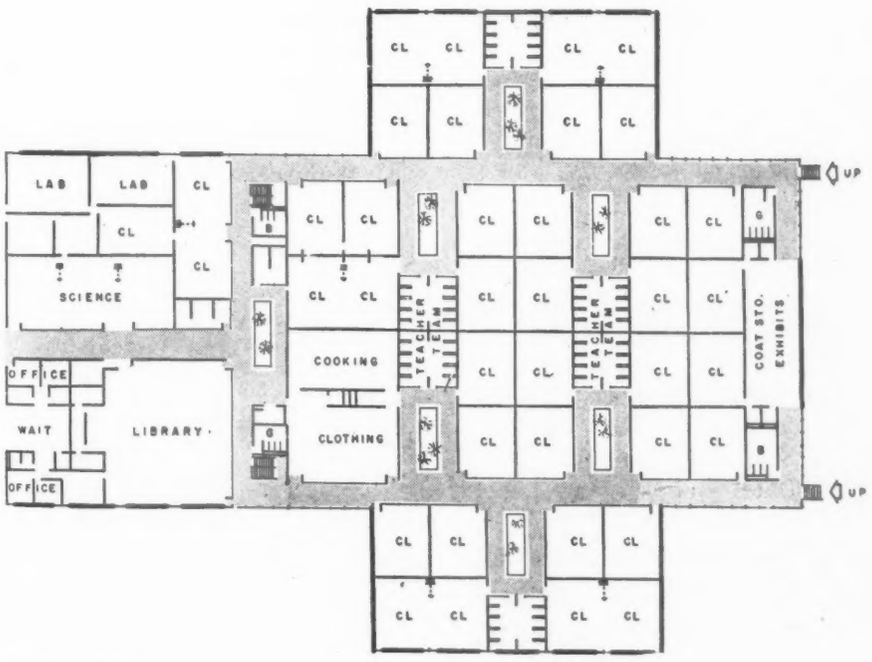
Q. Isn't there a danger of these buzz sessions becoming a shambles? After all, you have 11 separate groups meeting in a single classroom.

ANDREE: No, the student leaders can generally direct and control their own groups. And there are always some members of the teaching team circulating through the room to help them if they need assistance.

Q. Do you try to get some interaction among the different buzz session groups?

ANDREE: We have found that we can create a better learning environment by permitting youngsters to work with one another rather than directly with a teacher. We try to encourage this peer relationship whenever we can. One way is by combining experiences with a "wrap-up" at the end of each class meeting during which student leaders give accounts of the ground covered by their individual buzz groups. An incidental benefit we've noted from

No teacher should work in a team all day. He should teach some single classes.



District's second high school, at Olympia Fields, is being built around team concept. Expansible classrooms in academic level *(left)* are clustered around courts and team stations.

this encouragement of students to help each other has been a reduction in paper work for our teachers.

Q. Your reliance on student leaders would seem to place a premium upon superior pupils. Where does this leave your youngsters of average—and below average—ability? Can they participate effectively, too?

ANDREE: I think every child can do some one thing better than anyone else in a school. It may be skill in football or manual dexterity in practical arts or specialized knowledge in some remote area of interest. Our buzz sessions help bring these special abilities to light far more quickly and thoroughly than they could be uncovered in the traditional classroom. For that reason alone, I think they have improved the learning process in our high school.

Q. What other teaching devices do you use in your team teaching program in addition to lectures and buzz sessions?

ANDREE: We are turning to tapes more and more, especially in the lecture area. The less time our teachers spend in presenting masses of background material, the more time they have to develop specific study skills among their students. One of these is the proper use of basic library tools. Our school library is available for entire classes to use under the guidance of the teacher.

Q. This gets into the area of individual study.

ANDREE: As a matter of fact, we plan, eventually, to have an independent study laboratory with materials and facilities to permit students to pursue individual projects. One of our teachers recently taped an entire early morning TV program on nuclear physics and prepared a workbook, written for teenagers, to go with it. Now any student who wants to move ahead in the study of nuclear physics can do so on his own.

We also make use of our pupils to prepare additional materials. One of our youngsters has been reading a chapter taped from a chemistry textbook, for example. As he goes along he inserts cautions and advice of his own about the material he is reading. Then, if a chemistry student misses a class session, he can go to the laboratory and, in effect, read the text while discussing it with his teenage peer. We know this system works well because we have significantly reduced failures in chemistry since we initiated it.

Q Are individual study and research being emphasized in your program?

ANDREE: Except for the basic, elementary concepts of research, we would tend to leave development of research skills to the colleges. Right now, contrary to a current trend—particularly in English—we are making a sincere effort to reduce term papers to one per year per student, where feasible. We're not interested in developing a tough school with lots of busy work. That just multiplies the opportunities for error. A school should be a pleasant place in which learning can be fun. This doesn't mean it should be easy; it may only appear that way because its youngsters have been stimulated to greater effort.

Q. All the facets of team teaching that you have mentioned so far seem to rely to a great extent on student participation. How have they reacted?

ANDREE: Our disciplinary problems have decreased sharply and the need for discipline has all but disappeared. I don't think that team teaching makes the administrator's job any easier in terms of supervising the overall learning program. But it does relieve him of most of the disciplinary tasks he formerly had to handle.

Q. How completely are you committed to the team approach once it is established? Must it be continued all through the year?

ANDREE: Not at all. If the teachers and the division head decide to revert to regular classes during the month of December, for instance, they are free to do so. There are no strictures at all.

Q Can the team teaching approach be applied in any school building or must you have a structure specially prepared for it?

ANDREE: I think you would need a building designed, or remodeled, for a team teaching program. Remodeling is expensive, but if some changes aren't made to accommodate the team approach, you're going to have to be much more imaginative in your use of space—and you won't be able to use your space economically. But I don't think any building should be remodeled at all until the team concept has been thoroughly tested in the school first.

We began our own team operation in the high school cafeteria. It proved to be a most undesirable, though large, space. Food smells kept drifting in from the kitchen; bells rang loud, clear and frequently; there was no place to hang blackboards; and we had to put up and take down our electronic equipment for each session. But we experimented with teams first before adding a wing containing expansible classrooms. By that time we knew what we wanted, and needed, in the way of special facilities. This experience has helped us immensely in designing our new Olympia Fields High School, to be opened next year. The whole school is being built around the team teaching concept. *(See floor plan, page 53.)*

Q. How does it differ from a more conventional building?

ANDREE: It consists essentially of large classrooms which can be easily subdivided by means of movable partitions into two, three or four smaller teaching areas. The teaching teams are all located in the vicinity of these classrooms. This will be a completely flexible school in which we can move from team teaching to individual classroom lessons in virtually any desirable combination.

Q. What if you conclude, after several years, that the team teaching concept is no good? Have you saddled yourself with an unusable school building?

ANDREE: If that were to happen, we could go right back to individual classrooms throughout the school.

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How to plan a school kitchen

You can't design a school kitchen unless you know how it will be used. The questions you should ask—and the effect of your answers—are given in this step-by-step account of school kitchen planning.

By RICHARD FLAMBERT

■ ■ ■ "How do you design a school kitchen?" This is a question we are often asked by district officials when called in to plan feeding facilities for their schools.

To answer it, we must counter with questions of our own. Each demands an exact, specific answer before the problem can be attacked. Here are but a few examples of the kind of information needed to determine the size and shape of a school kitchen:

How many students are enrolled in the school? What has the percentage of participation been? Will a strictly Type "A" lunch be served exclusively? How many feeding periods will there be? What will the size of the dining room be? Is china, plastic, aluminum or paper preferred for service? What kind of price structure will there be? Has the meal pattern been determined? How much baking will be done? What arrangements are planned for faculty dining?

Of course, a great deal more must be determined about a school's lunch program before a suitable kitchen plan can be devised for it. The best way to demonstrate how such a plan is developed is with an illustrated example.

Elementary school kitchen

Let us suppose we are dealing with an elementary school of 600 students. It has a 50% participation, in two lunch periods of one-half hour each. In other words, 150 children passing the counter each period will be served a Type "A" lunch. *(For an example of how the shell would look for a kitchen serving this number of children, see figures A-C, page 56).*

Now we must determine the best method of serving these children. In this case we decided on a double line, each extending 28 feet. The children come in from two directions, go through the counter and out past the milk counter into the dining room. We are assuming that the ticket system would be used here. The ticket is handed to the attendant or to a student at the beginning of the line, so that no cashier is required. If a cashier is desired, we prefer to reverse the lines and have the child pay as he goes in. Figure A shows how the service part of the kitchen is designed. Included, is the dishwashing room showing how and where the dishes, whether plastic or china, are bussed by the children.

The next consideration is the handling of food. Added to our plan are the entrance to the kitchen, areas for weighing of food and for storage (*see figure B*). Also shown are the lockers and boiler room. After all of the other details are drawn up, we decide what equipment is required to produce the food. Figure C contains the necessary food preparation equipment. Included are a combination 20 gallon steam-jacketed kettle and two compartment steamer, a range and a two deck bake oven, two 45-cubic foot reach-in refrigerators and a 30-cubic foot freezer.

The pre-assembled tray-rack system is used in this kitchen. This means that the serving counters do not have any hot food units. They are simply flat counters, either stainless steel or laminated plastic. All but the hot food is assembled in a rack holding up to 48 compartmented trays per single rack. These racks are wheeled into place behind the counter prior to mealtime. Just before the children come in to eat,

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the cook brings the hot food directly from the oven or range in #200 size pans and places it upon the counter. As the children go by, the attendant reaches for the compartmented tray with the left hand. With the right hand she dishes the hot food into the pre-assembled tray and passes it to the child, who picks up a carton of milk and proceeds into the dining room. We have found this to be the most efficient and satisfactory method of servicing the child.

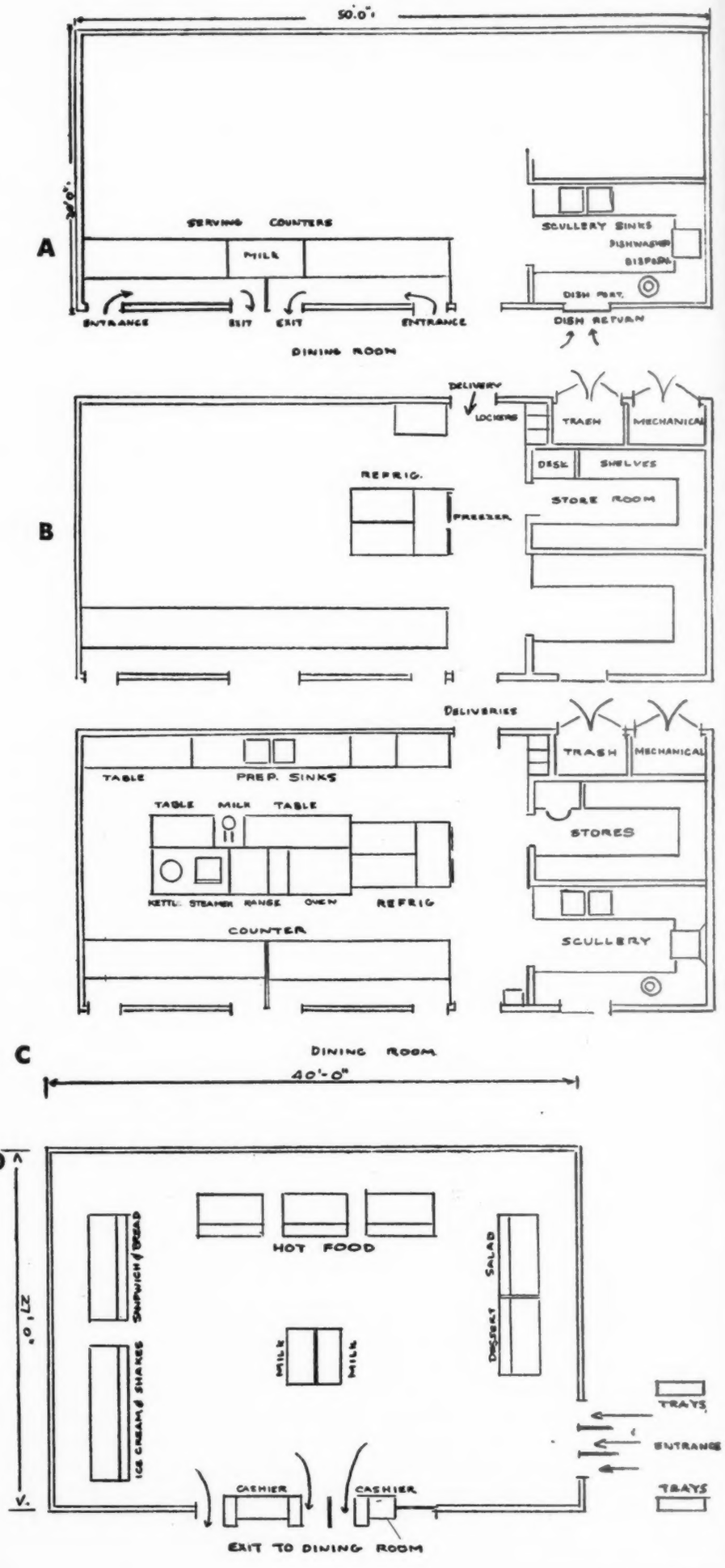
Secondary school kitchen

In the design of a secondary school kitchen, the same procedure is followed, except that in most cases an a la carte service is added to the plate lunch. If it is desired to serve the Type "A" meal exclusively, planning becomes mainly a matter of enlarging the kitchen (*see figures A, B and C,*) and lengthening the service line. Where an a la carte service is added, however, it is necessary to plan the design to eliminate bottlenecks.

The "scramble" system is one way to do it. We feel that this represents the ultimate—at present—in rapid, eye-catching and satisfying service.

Let's again take a hypothetical case by way of illustration. Assume that a high school has a student body of 1,800. If there is 60% participation—in three feeding periods of one-half hour each—360 students will be served each half hour. In addition, a certain number will bring their lunch but supplement it with milk, ice cream, etc.

As it would be desirable to take care of the 360-plus students in 12-15 minutes, we would require three cashiers. The average number of meals per minute handled by one cashier in a scramble is 10, so there would be 30 students passing the three cashiers every minute. Each cashier would normally handle 16-18 lineal feet of counter, which means that there would be 48-54 lineal counter feet in the scramble. For each foot of lineal counter, 22 square feet are required for the entire scramble area. Our plan uses 45 lineal feet of counter, plus the milk cabinets, in a total scramble of 1,100 square feet. (*See figure D for distribution.*) This part



of the plan must be devised first, for the design of a high school scramble starts with the scramble and not with the kitchen.

Once this is determined, we can draw the shell of the kitchen and attempt to place it so that two sides of the scramble can be serviced from the kitchen proper (*see figure E).* Next, we determine what will be necessary to prepare and service the food *(blocked in on figure E).*

After the preparation and service arrangements are completed, we decide what is required to receive, store, and sanitize the operation *(see figure F for details).*

Obviously, there are many variations to these plans. The matter of baking is quite important. The question of whether to make the hot food tables a part of the scramble or a part of the kitchen must be de-

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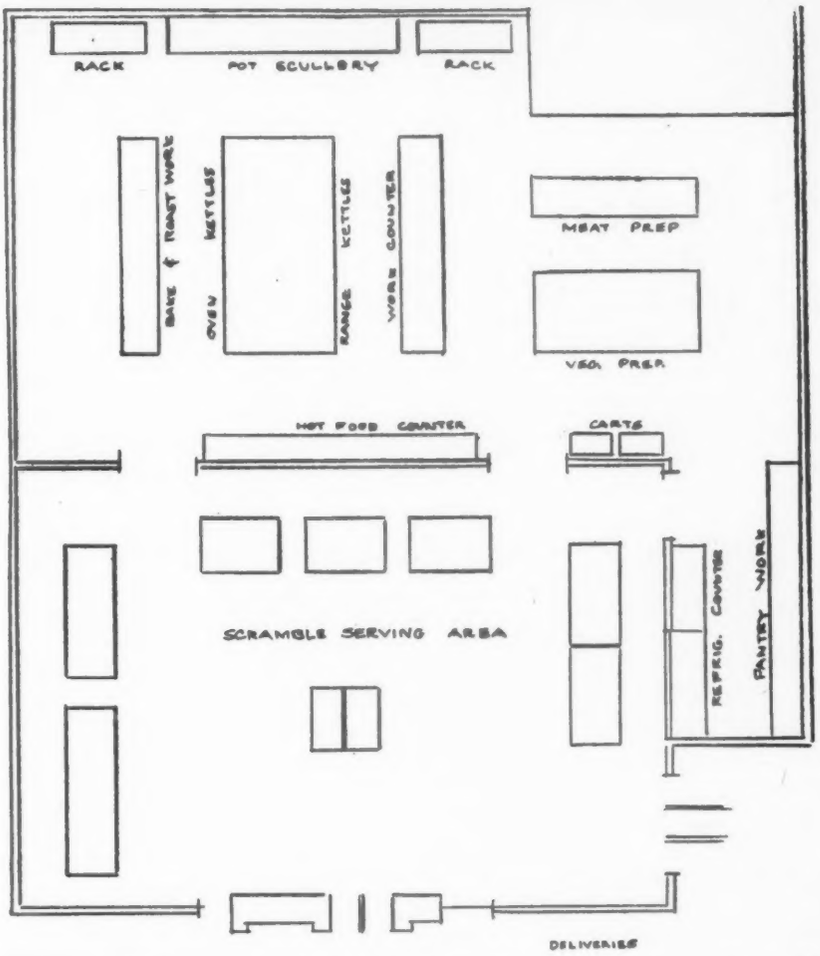

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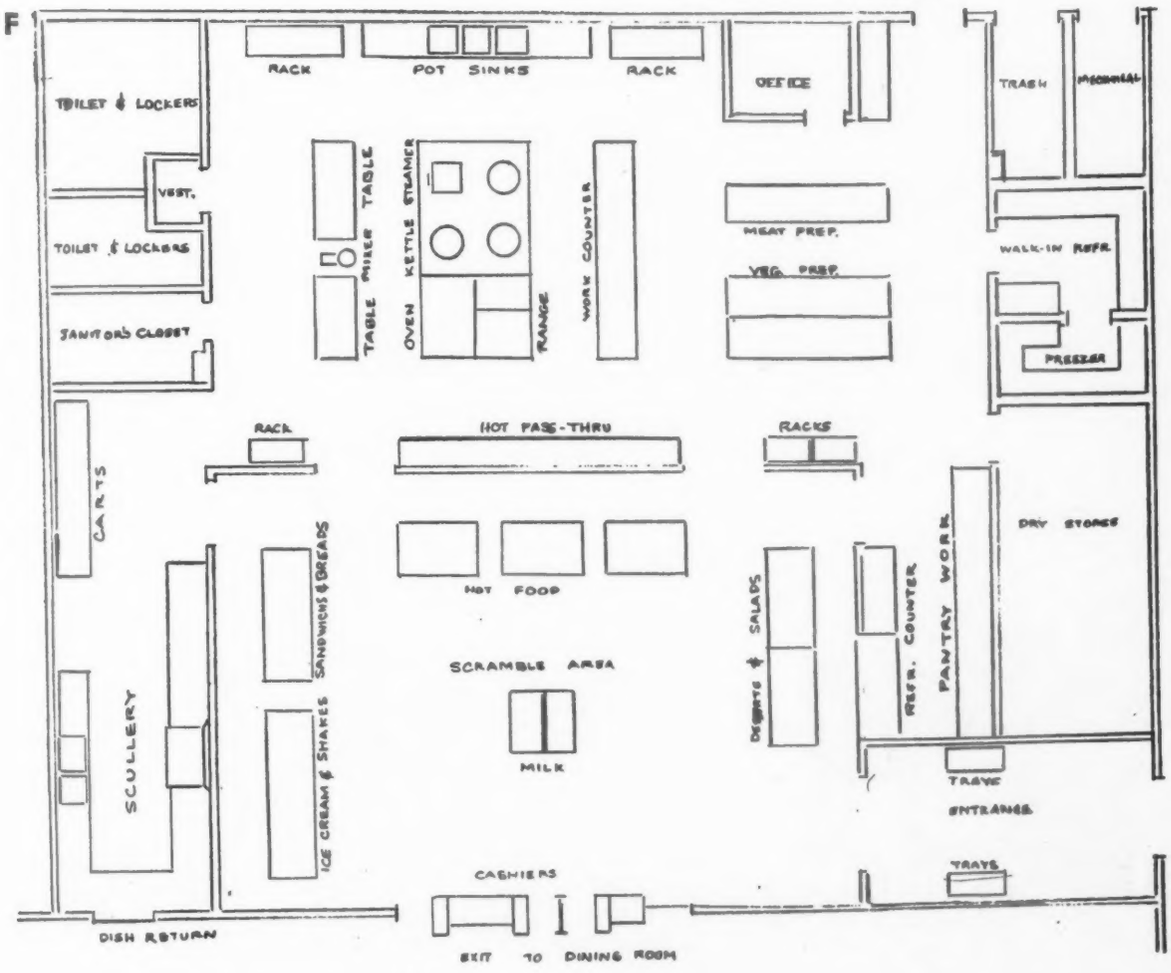


Is your district doing all it can with TAPE RECORDINGS?

There's more than one way to use an instructional aid, say schoolmen in Taylorville, Ill. Under a unique exploratory program, they continue to find new uses for theirs, in a variety of subject areas.

■ ■ ■ Few schools today lack some special equipment to help their teachers do a better job. Tapes, projectors, recorders, filmstrips—even elaborate language labs—are becoming increasingly common. But in many schools they are rarely used as well as they could be.

School authorities in Taylorville, Ill., decided to explore the promise contained in such devices. They knew that many teachers still tended to shy away from anything that might alter their conventional classroom approach. They knew, too, that preparing appropriate materials for use with teaching aids demanded extra time and effort. And, they wondered how such equipment could best be used to teach more effectively.

How tapes are used

Since 1954, the schoolmen in Taylorville have been working with some of these supplementary teaching devices. They have scheduled pre-school workshops where teachers can become proficient in their use. At very little cost, they have been finding new classroom uses for them all the time.

In Taylorville High School, prerecorded material is being used to supplement instruction in French, Latin, social studies, English, business education, American history and speech correction. Some of this material is commercially prepared. But most of it consists of tapes, planned and produced by the teachers themselves to fill their specific classroom needs.

The tapes are not all used in the same way or for the same reasons. In fact, some of the techniques now being tried in the high school may prove ineffective and will probably have to be abandoned. But Taylorville's Superintendent Forest L. De Weese is convinced that this is the only way their educational value can be determined.

Several benefits from the use of tapes in the classroom have already been noted. Teachers spend less time, effort and energy conducting group sessions. They are free to work with individual students in need of help while the taped material holds the attention of the rest of the class. They are also relieved of the task of conducting the same repetitive sessions with other classes during the day. Once the material has been taped, it can be played back whenever required to meet the needs of different groups. Instructors can

plan new lessons or grade papers during this time.

Students have demonstrated a keener interest in classroom work as a result of working with tapes. "In our language laboratory," says De Weese, "a youngster can now evaluate how well he is doing by simply playing back what he has just said and comparing it to the master tape. In the conventional classroom he can never hear himself speak. He only gets a general impression of what he sounds like and the teacher may tell him he's done well or poorly. But he can't assess his own effort. And this is what he must be able to do if we want to arouse his interest in language study."

The language lab in Taylorville is used almost exclusively for the study of modern foreign languages. Latin students use taped materials in their classes for vocabulary drills. Words are transmitted from the recorder to eight students at a time wearing headsets or to an entire class through the recorder's loudspeaker. Language teachers frequently make use of films, too. They prepare a synchronized commentary on tape and play it back while a film is projected.

One area in which tapes have been particularly helpful has been in developing good listening habits among students. According to De Weese, "The teacher addressing a class tends to pause or slow down when she sees the attention of a student wandering. This can be useful sometimes—especially if she's trying to maintain student interest in a discussion session. The only trouble is, while she pauses to regain one student's attention, she may lose the rest of the class. When tapes are used, the youngsters know the recorder will go right on with the lesson whether they're paying attention or not. The machine puts a demand on them to keep up with the material. We have found, as a result, that our students have taught themselves to become better listeners."

Tapes as teaching aids

Taylorville's use of mechanical aids reaches into a number of other subject areas. With them teachers have been able to present new supplementary learning materials that were never used in class before. Here are some examples of what they have accomplished so far:

■ **Social studies.** Seniors, in a course in American problems, are tested before graduation on their knowledge of the constitutions of both the United States and the State of Illinois. One instructor conducts six different classes, each of which covers the same ground. By prerecording his lecture, he is able to play it back to the students in each class instead of repeating the same material himself each time.

This has helped improve the course considerably, thinks De Weese. "When an instructor gives an oral lecture, he tends to be less critical of his performance than if he hears it played back on tape. Once he has recorded his material, he can edit objectively and polish it to perfection. The resulting lecture in class is usually more effective and pointed than it would have been otherwise."

Social studies classes have also used tapes to provide supplementary enrichment materials. The teacher, armed with a tape recorder, can go out and, in effect, bring the community into the classroom to dramatize some point under study. A meeting of Taylorville's mayor and his board of aldermen, for example, was taped by one social studies teacher to illustrate an aspect of municipal government.

■ **American history.** Here too, supplementary taped materials have enabled teachers to stimulate interest in the subject. Says De Weese, "One instructor recently prepared a tape on the decade of the '20's. He covered it in documentary fashion with music of the period and a personal running commentary of his own on the events and personalities prominent at the time. It really brought the remote 1920's alive to our 1960 youngsters."

■ **Business education.** Students have been able to practice transcription drill more effectively with tapes. The dictated material can be carefully recorded at exactly the speed required with little chance of inadvertent change of pace. A number of tapes can be made up at different rates of word speed for the use of beginning or advanced students whose skills and needs for drill materials vary widely.

An even more telling argument for using tapes in office practice classes, thinks De Weese, is that they can help simulate the actual conditions under which students will work when they graduate. "Male voices are recorded and played back during dictation practice sessions. The enunciation and diction on these tapes is usually rather poor. We do this consciously so that our students can learn to adjust to some of the dictation difficulties they may have to face when they leave school to take on their first jobs in business and industry."

■ **Speech correction.** A tape is made of a student's speech when he begins corrective work and kept on file for review. As the student progresses, he is able to gauge how well he has done by listening to the tape. Prerecorded tapes are used, of course, for the repetitive drill sessions on speech sounds, saving needless wear and tear on the instructor.

■ **English.** Tapes, records and filmstrips play an important part in the high school's program of English instruction. A study, currently underway, is looking into ways to utilize teams of teachers to provide

On the spot

Review is easier, discipline improved, with taped teaching.

large- and small-group instruction. Mechanical devices have proved helpful here, particularly in spelling drill, speech and vocabulary improvement as well as in poetry readings where stress, pace and emphasis can be clearly illustrated with prerecorded material.

Shortcomings

There are several cautions voiced by Superintendent De Weese regarding the use of supplementary mechanical devices in the classroom. There is always the danger of overdoing taped lectures. "It would be foolhardy to conduct a 45-minute class consisting of taped materials only, played through the speaker," he says.

"The advantage of using tape at all lies in the change of pace made possible by presenting shorter runs of varied materials—sparked by sound effects. The taped documentary of the 1920's is a case in point. We generally try to keep our prerecorded material down to 10 or 15 minutes when working with full size classes. Otherwise the students' attention would wander and we'd lose whatever advantage we may have gained. This doesn't apply in the language lab, however. Here we have found that longer tapes can be used —though change of pace is frequently introduced within the taped material itself."

The preparation of suitable materials also presents some problems. Extra time and effort are required for teachers to produce usable tapes. But this, says De Weese, is worth it in the long run. "Youngsters tend to be more critical of tape than they would be of teachers presenting materials personally. They are quick to catch defects, whether they are mechanical or due to poor organization of subject matter. I would emphasize in this connection that a poor tape is worse than no tape at all."

Benefits

These disadvantages are slight, however, compared to the educational gains which have resulted. Students can easily complete makeup work due to absence from school by going to tapes of the material they missed. "The student doesn't feel he has been short-changed," De Weese relates. "He knows he can review in full the same ground his class covered on the day he was out. All he has to do is listen to the tape of that day's lesson."

Most of this makeup work is now done in the language laboratory, but De Weese hopes soon to establish a materials center in the library where tapes of lectures and supplementary materials can be kept on file. "We expect delivery of a short wave receiver soon," he says, "from which we can tape foreign language broadcasts and Voice of America programs to supplement our language and social studies courses."

An incidental result of the use of tapes has been improved control of groups in the classroom. "Our teachers have actually been able to maintain better discipline," according to De Weese. "The reason is simple. When a master tape holds the attention of the entire class, the teacher can easily check an unruly youngster without disturbing anyone else. The offender loses the thread of the taped lecture, of course, but the rest of the class usually doesn't even know he is being reprimanded."

Taped materials are not restricted to the high school only. There is at least one recorder in each of Taylorville's eight elementary buildings and several have been purchased for use at the junior high level. These are used in conjunction with other audio-visual equipment in each building. "We have a trucking system," De Weese explains, "to transport the equipment from building to building within a half-hour if necessary. Projection facilities in our schools are housed in a central area of each building and teachers use a checkout system to borrow equipment for use during a given hour.

"Our explorations into the uses to which these teaching devices can be put—in all our schools—have made one fact clear: Teachers must learn to become co-workers with their students in the matter of assembling materials. No instructor has the time to be a resource person in every area at once. But our youngsters can —and do—bring in their own tapes of Voice of America broadcasts, for example. Some have even produced specialized materials which they have been able to obtain through the help of their parents or contacts they may have in the community. All of these student-collected enrichment materials have become invaluable additions to our backlog."

Cost of the program

De Weese estimates that Taylorville's language laboratory cost the school about $7,000, exclusive of a

continued on page 116

On the beach

On the ball

Are your schools doing a good job?

The best way to find out how well your schools are doing is to examine their product. Here's how school authorities in New City, N. Y., surveyed recent graduates and used their suggestions.

By RICHARD F. DeFOREST

■ ■ ■ Are our schools as good as they could be? Can a comprehensive suburban school keep pace with a rapid population growth and, at the same time, maintain and improve its educational program?

These were the questions schoolmen in New City, N. Y., sought to answer when they instituted a five-year followup of the graduates from their Clarkstown junior-senior high school.

New City is in the midst of a $12-million school construction program. Within six years, the district—located 30 miles from New York City—has constructed a junior-senior high school, three elementary schools and additions to three others. Under construction at the present time are a junior high school, an elementary school and additions to four existing elementary buildings.

"With such a huge emphasis on the building problems of the district, we were concerned that we might be falling behind in the academic areas of our program," says Richard F. DeForest, coordinator of pupil personnel services.

"We were concerned about our product—the graduates. We wondered how many had gone on to college, how well they were doing and whether they were adequately prepared. Questions were raised, also, about the business and vocational courses we were offering. Did they really prepare our graduates to go into the work areas they preferred?"

According to DeForest, the best way to get answers to these questions was to ask the people involved—the students who had graduated from Clarkstown high school during the years of our tremendous building program.

Getting information

In July, 1959, a questionnaire was mailed to each of the 458 students who had graduated from Clarkstown during the period from 1954 through 1958. A covering letter from the high school principal explained the questionnaire and invited the former students to participate. A stamped self-addressed envelope was included to encourage a speedy return.

At the time of the final tabulation, April 1st, 1960, 42% of the graduates had returned completed questionnaires. Of this group, 54% had taken a standard academic (college preparatory) course, while 30% had been enrolled in the business education sections. General or vocational courses accounted for the other 16%.

What they said

Tabulations of the questionnaires showed that two-thirds of the students answering were then attending, or had attended, college or otherwise gone on with their formal

What subjects taken in high school have been of greatest value to you since you left school? Of least value?

Greatest Value	
English	60
Typewriting	49
Mathematics	47
Science	39
Shorthand and Secretarial Practice	31
Citizenship Education	29
Business subjects	22
Physical Education	20
Vocational courses	19
Spanish	18
Latin	15
Art	12
French	11
Mechanical Drawing	10
Driver Training	9
Music	9
Homemaking	8
Industrial Arts	8

Least Value	
Citizenship Education	30
English	18
Science	16
Mathematics	13
Business subjects	13
Spanish	12
French	9
Physical Education	9
Latin	7
Industrial Arts	6
Music	5
Homemaking	5
Driver Training	3

schooling. Seventeen percent had dropped out of college or advanced schooling, most of them citing academic failure, financial difficulties or marriage as the reason. (One out of four members of the classes was married.)

In answer to the question: "What subjects taken in high school have been of greatest value to you since you left school?"—English, typewriting, mathematics, science and shorthand led the lists.

Interestingly, three of these also ranked high in responses to the question: "What subjects have been of *least* value?" In this case, students ranked social studies first, followed by English, science and mathematics.

Five academic courses rated close to the top in response to a question concerning subjects that would be desirable in high school but were not offered. These included German, literature, psychology, calculus and advanced science. A large number of votes were cast for a course in that most elusive of all subjects—how to study.

The graduates were asked, also, to tell in what ways their high school years had most helped them in preparing for college or advanced education. Good academic background was checked by 36% of those replying, with guidance services (23%), good study habits (12%), and opportunity for leadership (8%) also getting a lot of support.

Most of the graduates (70%) were satisfied with the teaching methods used in the schools and almost as many (69%) said that they had found high school homework valuable. Eight out of 10 felt that teachers had taken enough personal interest in them and 72% commented that the school had helped them to find their special aptitudes.

Finally, 69% of the graduates gave the schools a top grade in answer to the question, "In general, did the school prepare you well for what you are doing?" but 23% disagreed and 8% gave qualified answers.

Asked to describe how the school could have done a better job, many of the graduates who went to college said they wished that they had worked harder in high school. They also felt that there should have been greater emphasis on English composition, grammar, literature and report writing.

In addition to English, some graduates reported that they had experienced difficulty in college with chemistry and physics and recommended that these courses be strengthened in the high school. More group discussions and seminar-type classes were also suggested.

Using the results

"Of course, a survey of this type is simply a waste of time and money, unless the results are put to use," says DeForest. "When we mailed our questionnaires, we had already determined that the results would be studied, with an eye to examining problem areas that our graduates might pinpoint."

The results of the five-year study indicated a need for some changes in the school curriculum. "Academic success in school or college," De-

What subjects that were not offered would you have liked to have taken in high school?

No response	36	Logic and philosophy	5
German	17	Italian	5
How to study	14	Marriage course	4
Literature	14	Anatomy	3
Psychology	12	Combination vocational and college entrance course	1
Calculus (advanced math)	12	Microbiology	1
Better course in English	11	Electronics	1
Reading	9	Retail business training	1
Speech	9	Estimating and design	1
Advanced science	8	Fashion design	1
Advanced history and English	8	Surveying	1
More half-unit subjects	8	Practical nursing	1
Economics	6	Management and leadership	1
Homemaking	6	More French	1
Sociology	5	Four years of homemaking	1
More business machines	5		

TOTAL — 213

Note: Total exceeds 195 as some graduates listed more than one.

Forest noted, "depends a great deal upon the ability to read carefully, to think critically, to write clearly and understandably, and to know where to look for information."

To meet these needs, the New City English department has outlined new programs at each grade level to stress more composition writing, increased drill in English grammar, and a broader program in literature.

The science department is currently developing an advanced placement course for accelerated students who will complete four years of science during this their junior year.

In mathematics, a course in calculus and analytical geometry has already been added to the curriculum.

An enriched social studies course for able twelfth grade students has been revised to follow the syllabus of the advanced placement course in European history.

The foreign language program has been expanded to include a fourth year of French and the addition of German; it presently offers four years of Spanish and three of Latin.

Ability grouping introduced about four years ago in some subjects, will be expanded to encompass all classes where differences in ability are great.

"We have every reason to believe that the results of our study will stimulate better teaching," DeForest explains. "The suggestions made by our former students have been studied by the faculty with the aim of creating a desire for learning within the classroom. A specific example is the development of a 'How to Study' manual. It will consist of suggestions, techniques, and methods of study peculiar to specific subject matter fields. These techniques have been prepared by the teachers of each subject and will be used as a part of the regular instruction.

"The guidance services, favorably mentioned by graduates in regard to course planning, career advice and preparation for college, will be increased and improved. More emphasis will be placed on individual counseling with pupils, parents and teachers."

"We feel that changes instituted in our curriculum will result in a better education for our students," adds Superintendent Felix Festa. "But we are getting extra benefits."

Extra dividend

"For example, we have made copies of this report available to all our citizens. We feel that the report will serve as a public relations tool. It shows that we were doing a good job. And where we weren't, we are taking steps to improve ourselves.

"In addition, a citizens' curriculum committee, composed of professional and business people in our community, has worked closely with our faculty to interpret this report and to put its lessons into action. Again, we feel that this has been a major public relations advantage."

Concludes DeForest, "If you're willing to be criticized, don't be afraid to ask your graduates how you're doing. They'll be honest in their replies and their answers can help to improve your schools." **End**

How to plan lighting for a new school

In Southampton, N. Y., board members studied room-by-room needs before approving lighting plans for their new high school. Here's how they met widely varied lighting requirements within the building.

By J. WILBERT JONES

Superintendent of Schools, Southampton, N. Y.

■ ■ ■ One way to test the effectiveness of the lighting in a new school is to walk through the building after it has been completed. That's what most school board members do. The trouble is, it's usually too late by then to do much about any design inadequacies they may find.

Often, too, economy seems to dic-

CLASSROOM

Each classroom in Southampton High School has recessed fluorescent fixtures which provide glareless desk-level illumination of 60 foot-candles.

AUDITORIUM

Similar fixtures set in auditorium's sloping ceiling have acrylic plastic lenses with hundreds of cones molded into them to produce more uniform light.

tate that lighting be kept just at the acceptable minimum. Few architects or electrical engineers will choose to really exceed minimum requirements without a strong go-ahead from the school board.

In Southampton, N. Y., our school board members wanted to provide the best possible lighting for our new high school, exceeding minimum standards when it seemed advisable.

To accomplish this purpose, the members scheduled a six-hour skull session with Architect Frederick E. Allardt, Jr., and representatives of several lighting firms, in an effort to learn just what is good, new and desirable in lighting equipment and ideas.

Our board members were immediately exposed to two cornerstones of lighting selection:

- The school lighting standards of the Illuminating Engineering Society, upon which original lighting plans were based.
- The theory of different lights for different needs throughout a building. It is obvious to any layman that the light level needed for reading in a classroom is not necessary for a boiler room, but the board learned about much more subtle differences in lighting fixtures and levels for different purposes.

As a result of this meeting—scheduled while the school was still in the planning stage—our board believes it secured a top-quality lighting system for the high school at a price that was right.

How needs were determined

Before approving the kind, number and spacing of lights for each particular area in the building, the board considered several important facts. Among them: the illumination level dictated by the way the space would be used; the dimensions of the room; its color; and its physical layout—windows, furniture arrangements, etc. Then the output, spacing and arrangements of different kinds of fixtures were determined.

Two other factors were also considered: how easily the lights could be maintained once they were installed and whether or not they could be easily installed in the first place.

Here is the way each area in the new high school is lit as a result of the board's deliberations.

- **Classrooms.** Each of our 11 classrooms features a desk-level illumination of 60 foot-candles. Two-foot by four-foot recessed fluorescent fixtures with acrylic plastic lenses *(see photo, page 64)* have been installed in the ceilings. The lenses direct the light in a multitude of overlappping cones which, for practical purposes, create shadowless illumination.
- **Auditorium.** In the auditorium *(see photo, page 64)* the same type of lighting is used. The illumination level in this room is 50 foot-candles.
- **Gym.** The 400-watt mercury vapor lamps used here have a higher output per watt than other types and

GYMNASIUM

Gym's mercury vapor lamps in prismatic glass reflectors provide light for sports events. Incandescent "walk through" lamps are used at other times.

LOCKER CORRIDOR

Locker corridor lighting units have reflectors to redirect upward light to prismatic lenses flush with ceiling. These bend light back down to the floor.

last from 10,000 to 12,000 hours. The parabolic-shaped glass reflectors have smooth inner surfaces that prevent dust accumulation. Prismatic corrugations run along the outside from top to bottom and reflect upward-directed light back down into the gym. The twin lamps near the basketball hoops provide extra illumination at these locations. The illumination level is 60 foot-candles; at the spectator stands *(folded away in photo, page 65)* it is 35. Scattered among the mercury lamps are a number of 500-watt incandescent "walk through" lamps for lighting the gym whenever full illumination for sporting activities is not required.

■ **Locker rooms.** In lighting the locker rooms, bowl-type incandescent fixtures are mounted on the ceiling. They direct light along the aisle in one pattern, and across it in another. Inexpensive 150-watt incandescent lamps are used as the light sources, and the illumination level is only 12 foot-candles.

■ **Locker corridor.** Recessed incandescent lights illuminate an entry corridor having lockers along one side and a window wall on the other *(see photo, page 65)*. The units have reflectors which redirect upward light to prismatic lenses flush with the ceiling. These lenses then bend the light to distribute it in a glare-free pattern.

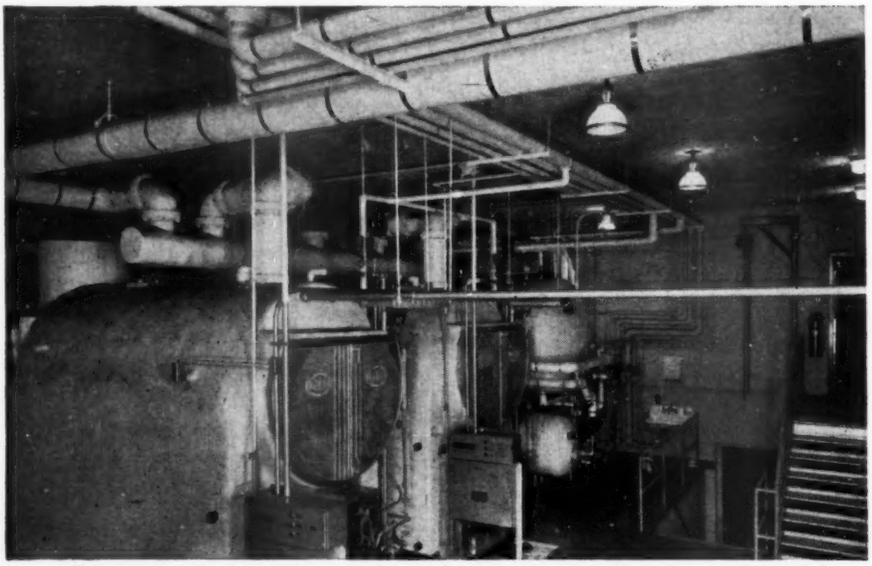
■ **Kitchen.** Fluorescent lamps contained in four foot-long "U"-shaped prismatic enclosures are used here to eliminate glare.

■ **Boiler room.** The same type units used for "walk-through" lighting in the gym are installed here. But reflectors do not have metal covers, since it is desirable to illuminate upper as well as lower portions of the room *(see photo, this page)*.

■ **Home economics room.** A portion of this room—the sewing and study section—is lighted with the recessed fluorescent equipment used in the classrooms; the cooking section features recessed incandescent units *(see photo, this page)*. A lower ceiling, truer color rendition with incandescent lighting, and the need to concentrate light in certain locations are principal reasons for incandescent fixtures in this section.

Our high quality lighting system has been worth the care and effort that went into its planning. Every area in the school—from classrooms to boiler room—features shadowless, glareless lighting of the required intensity. Our board members know this for a fact because they scrutinized the design right from the beginning. **End**

BOILER ROOM



Incandescent "walk through" lights, similar to those in the gym, are used here without metal covers in order to illuminate both upper and lower sections of room.

HOME ECONOMICS

Fluorescent fixtures illuminate the sewing section while incandescents are used in the cooking area for concentrated light and better color rendition.

Need help on lighting?
Most lighting equipment manufacturers can give you expert advice on school lighting. If you want to know more about standards, fixtures, designs and systems, circle number 840 on Reader Service Card.

WHY do our schools cost so much?

Your answer can often mean the difference between the success and failure of your district's program. In Northbrook and Glenview, Ill., citizens understand the need for their costly high school. You can explain the cost of your own schools the same way

■ ■ ■ No district's taxpayers have to be told that modern schools are expensive. They know it—and each year grow more reluctant to pay the mounting price of educating their children. They know about inflation and rising teachers' salaries and building costs. Yet, every time they're asked to dig a little deeper to meet district expenses, their reaction is the same: "Why are our schools so costly?"

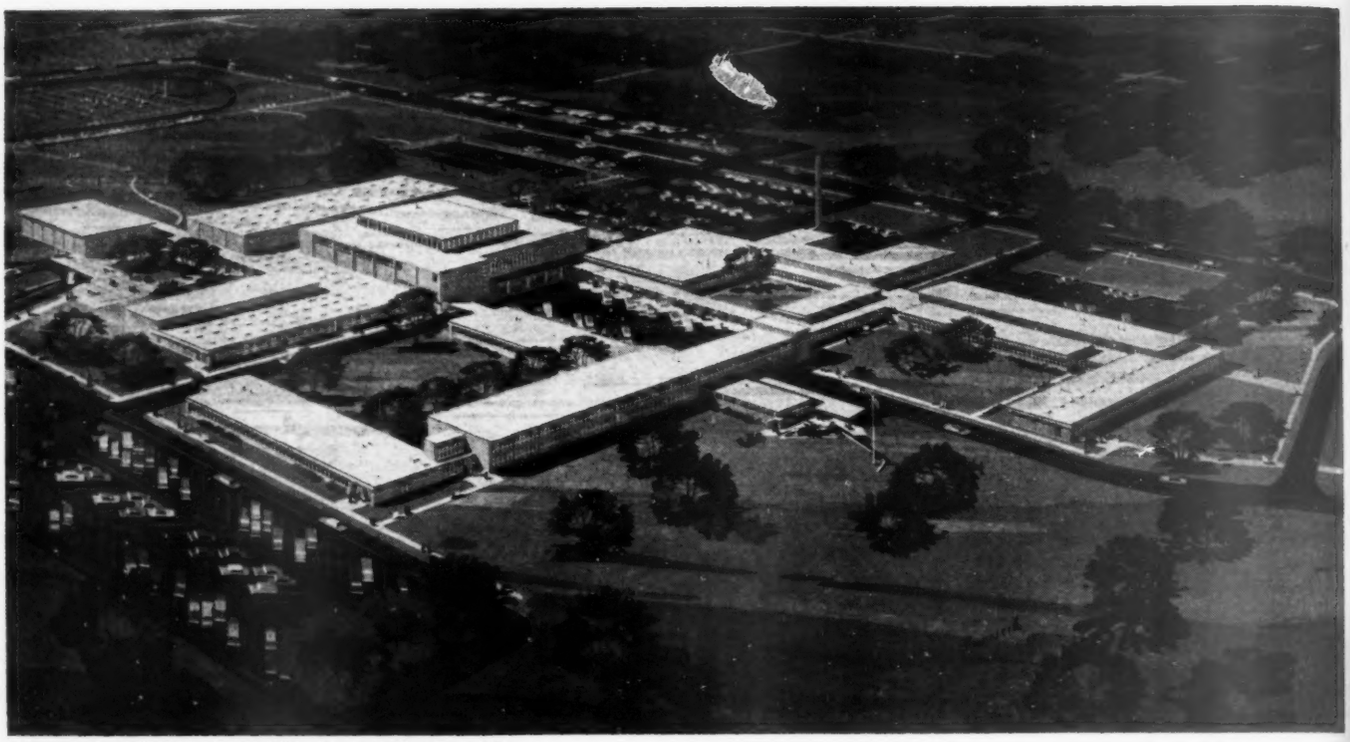
You have to come up with a satisfactory answer. To give an intelligent explanation of school costs to laymen, you must first find out what they want in the way of a sound school program. Then you can let them decide how much they're willing to pay to get that program working in their district.

That's what school officials in Northbrook and Glenview, Ill., did to get approval for costly Glenbrook High School. Essentially, their approach consisted of three stages. First, they determined the district's educational desires. Then they showed the taxpayers how much it would cost to support the program they wanted. Finally, they proved that the money spent resulted in the kind of education the citizens had asked for.

In almost every state, the major portion of the school program is mandated by law. Most of the academic program and specified areas of corridor, washroom, locker room and conference room space have to be included in the school building plan whether local residents favor them or not. What district officials wanted to know was what their community expected to find in their high school, over and above the basic minimums prescribed by state law.

How to determine need

The surest way to discover what your public expects from its schools is to ask. Back in 1950, three years before Glenbrook High School was built, schoolmen in Northfield Township High School District No. 225, conducted a survey of public opinion. They asked local residents what features they would like to see included in their proposed secondary school. Did they feel a swimming pool was needed? Should industrial arts be included in the curriculum? How much emphasis should be placed on science study? . . . on physical education? . . .



Glenbrook High School, Northbrook and Glenview, Ill.

on the attractiveness of the school building?

The results of this study showed that Glenview and Northbrook's young, highly educated, middle-income public wanted a school that would provide a rich, comprehensive program for its children. Armed with this information, school officials then called in their architects. They asked for a building design that would provide for the basic program mandated by the state and those additional features that local residents felt should be included.

With the design in hand, they turned to the public once again. They knew what their taxpayers expected of the proposed high school, but they had to show them how much this was going to cost—and why.

"Here is a school designed to meet all your needs and desires," they said. "It will cost you $4,847,000 to build it. That's a lot of money, but let's break it down.

"The very least you would have to pay," they explained, "to provide the minimum program required by state law, would be $3,452,000. That means it will cost you only $1,395,000, the amount needed over and above that required to meet state minimums, to give your children the very best education possible. That's the figure you must think over. If you want a high school of this caliber—and you have indicated that you do—this is how much you must spend."

Northbrook and Glenview got the money and Glenbrook High School was built. But the effort didn't stop there. School authorities knew that in a few years another high school would be needed. Realizing that the best way to sell a second school is to prove that the first is doing all that was expected of it, they make sure their public knows exactly how well Glenbrook High School is performing. One prong of this effort is a highly effective plan of school-citizen cooperation which permits parents to participate actively in decisions affecting the curriculum, facilities and needs of their high school. According to Superintendent Norman E. Watson, this close harmony between school and parents has been a major factor in achieving the district's educational goals. What's more, it has been of considerable help in formulating plans for the needed second high school.

In this tape-recorded interview, Dr. Watson tells about the Glenbrook program and how it is meeting the needs and desires of the community. What he says here in SCHOOL MANAGEMENT is exactly what he is telling his community's voters to insure their approval of a second high school of equally high quality.

Q. Dr. Watson, ten years ago, when you started planning Glenbrook High School, you knew exactly what your public wanted. But an awful lot has happened in the last decade. How do you know if you and your public still see eye to eye on the objectives of a high school education?

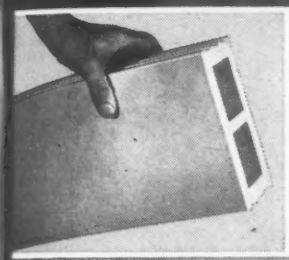
WATSON: First we keep our local people informed of what we are trying to do. Second, we ask them to participate actively in the planning of our educational program. We go to them and ask, "Are we doing all right? Are we doing things that you don't want us to do? Are we overlooking something you feel should be included?" We do this through our grade level advisory committees, made up of two parents from each grade.

In addition, our assistant superintendent of curriculum and supervision works very closely with a citizens' committee on curriculum, facilities and needs. So we're well aware of the public's views.

Q. Are the committee members really capable of examining a high school curriculum and making recommendations on it?

WATSON: This committee consists of about 35 interested laymen who look at all our offerings—clear across the board, including equipment and physical space needs—and give us their opinion of what we're doing, or

NATCO VITRITILE COMBINES BOTH BEAUTY AND DURABILITY IN MODERN WESTLAKE SCHOOL



NATCO VITRITILE is available in three nominal face sizes: 8" x 16", 5⅓" x 12" and 5⅓" x 8" in 2", 4", 6" and 8" thicknesses.

SOFT, RESTFUL effect is achieved in this windowless, inside hallway through the use of Natco Vitritile and artificial lighting.

BRIGHT, CHEERFUL walls of Natco Vitritile help to create a comfortable, friendly atmosphere for all who enter the main concourse of the modern Westlake Junior High School near Erie, Pennsylvania. Architect: Nelson, Goldberg, Heidt—Erie, Pa. Contractor: E. E. Austin Co.—Erie, Pa.

Natco ceramic glazed Vitritile was selected for extensive use throughout Westlake Junior High School near Erie, Pennsylvania, for two very important reasons:

First, because Vitritile is a cheerful, colorful building product that is ideal for inside wall construction. It is available in a variety of brilliant, modern, *permanent* colors that will never fade. Cleansed periodically with common soap or detergent and water, walls of Vitritile will *always* retain their original "new look."

Second, because Vitritile is a durable building product. It is a *genuine*, load-bearing clay tile material and, thus, completely fireproof and capable of lasting for the lifetime of any building in which it is used.

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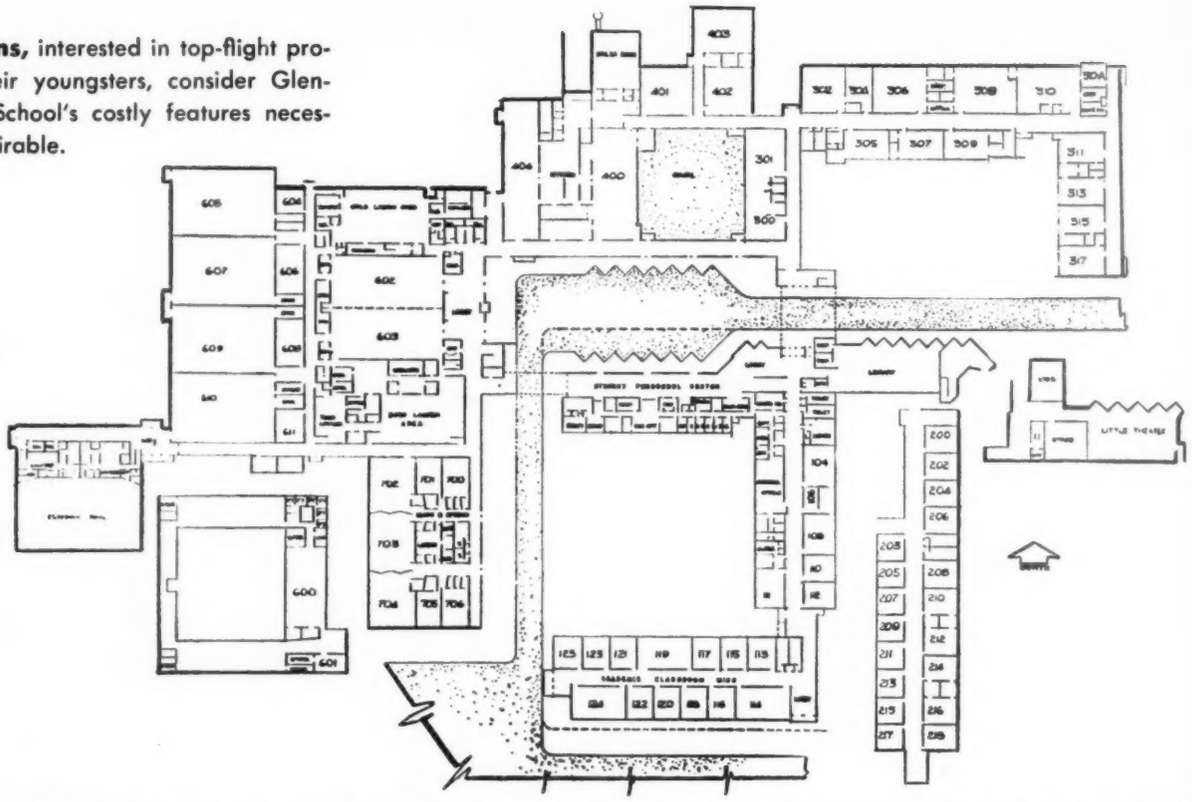
(Circle number 778 for more information)

Local citizens, interested in top-flight program for their youngsters, consider Glenbrook High School's costly features necessary and desirable.



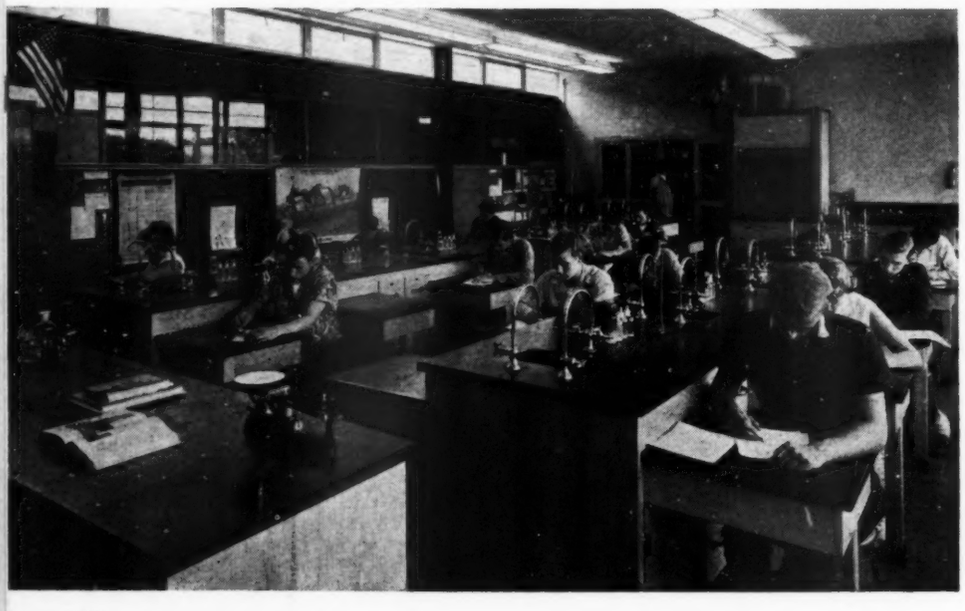
not doing, in Glenbrook. They can reflect the public's thinking.

Q. How does this committee really help in planning the curriculum?

WATSON: It gives us valuable assistance in deciding on emphasis. There are discretionary areas where citizens and schoolmen can work together to arrive at a mutually satisfactory program. Glenbrook's science department, for example, probably has a better trained staff and more costly equipment than most other high schools. Right now we're teaching the MIT experimental physics program. The reason we're doing it is that our district's parents expect our science department to be tops. Many of them are employed in experimental laboratories nearby and have graduate degrees in physics and chemistry. So, naturally, they want their children to be thoroughly grounded in the sciences.

Q. Just what do you offer in Glenbrook's science program?

Glenbrook's science program has superior teachers and equipment only because taxpayers favored a top-notch program and were willing to foot the bill.



WATSON: We teach earth and physical science, beginning and advanced biology, two kinds of physics and two kinds of chemistry. We're gradually abandoning general science as the elementary schools pick it up. Our physics and chemistry classes study either college preparatory material or more generalized courses which aren't quite so difficult. For the past two years, we have conducted advanced science seminars during the summer for interested young scientists. Finally, we've had unusual success with science fairs. Almost every one of our science students submits a project—we sent about 700 projects to the last state fair. To achieve this, you must be willing to spend enough money for teachers and equipment to stimulate and train students.

Q. You obviously have strong public support for your science program. What about other subject areas—foreign language study, for example?

WATSON: Here, too, we wouldn't be able to function as we do unless we had a demand on the part of our residents. We teach four years of French, German, Spanish and Latin and—if public interest justifies it—may shortly introduce the study of Russian. In addition, we were the first among the Chicago area high schools

orange crate makeshift or gold-plated deluxe . . .

What Should You Buy in a Filing Cabinet?

TIME was when you could define file quality quite clearly as Grades A, B, C, or D. But no longer do these designations mean much. Manufacturers now are producing models which cut across these former guide posts.

There are still legitimate "Grade A" files today, as there were in former years. But unqualified claims to this label by various manufacturers have in recent years tended to confuse the picture for the buyer.

Whatever the grade label, there have been many substantial improvements in all classes of files. More performance, more function have been built into economical versions of the so-called "Grade A" files to make them more practical for general office and classroom use.

And even in the "low-end" group of accepted commercial grade files are some features not too different from those of the high-priced makes. These files also have their place—but their place should be defined.

To intelligently approach the file market, a buyer must have clearly in mind the use for which the file is intended. Will a file drawer be opened on the average of once or twice a day, or 20 times a day? What about drawer loading and capacity? Are quietness and ease of operation important factors? The answers to these and other questions will define your specific requirements.

Accordingly, the informed buyer can buy for his specific needs. It is wasteful to spend extra dollars for a high-priced file where the need does not justify it, just as it is foolhardy to expect too much from a "cheap" unit. Filing requirements should be analyzed regularly, and standards changed as needed, to make sure that you are buying properly.

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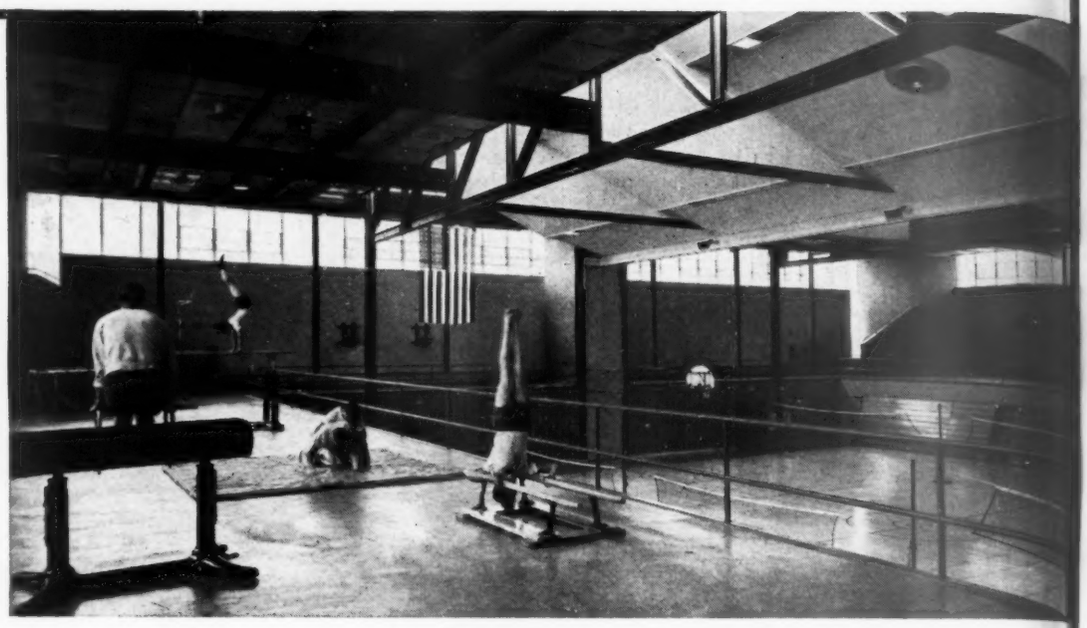
$475,000

The voters could have cut gym costs by about a third had they been willing to reduce the physical education program in proportion.



$500,000

Residents feel that Glenbrook's pool was worth a half-million dollars—especially on family night when the community comes to swim.

to introduce an electronic language laboratory. We conducted some control experiments first and found an amazing improvement in learning with the lab. So we went ahead and set it up in Glenbrook at a cost of around $12,000. Now, in some communities, I imagine that might be termed a luxury.

Q. Did anyone in Northbrook object to the expense?

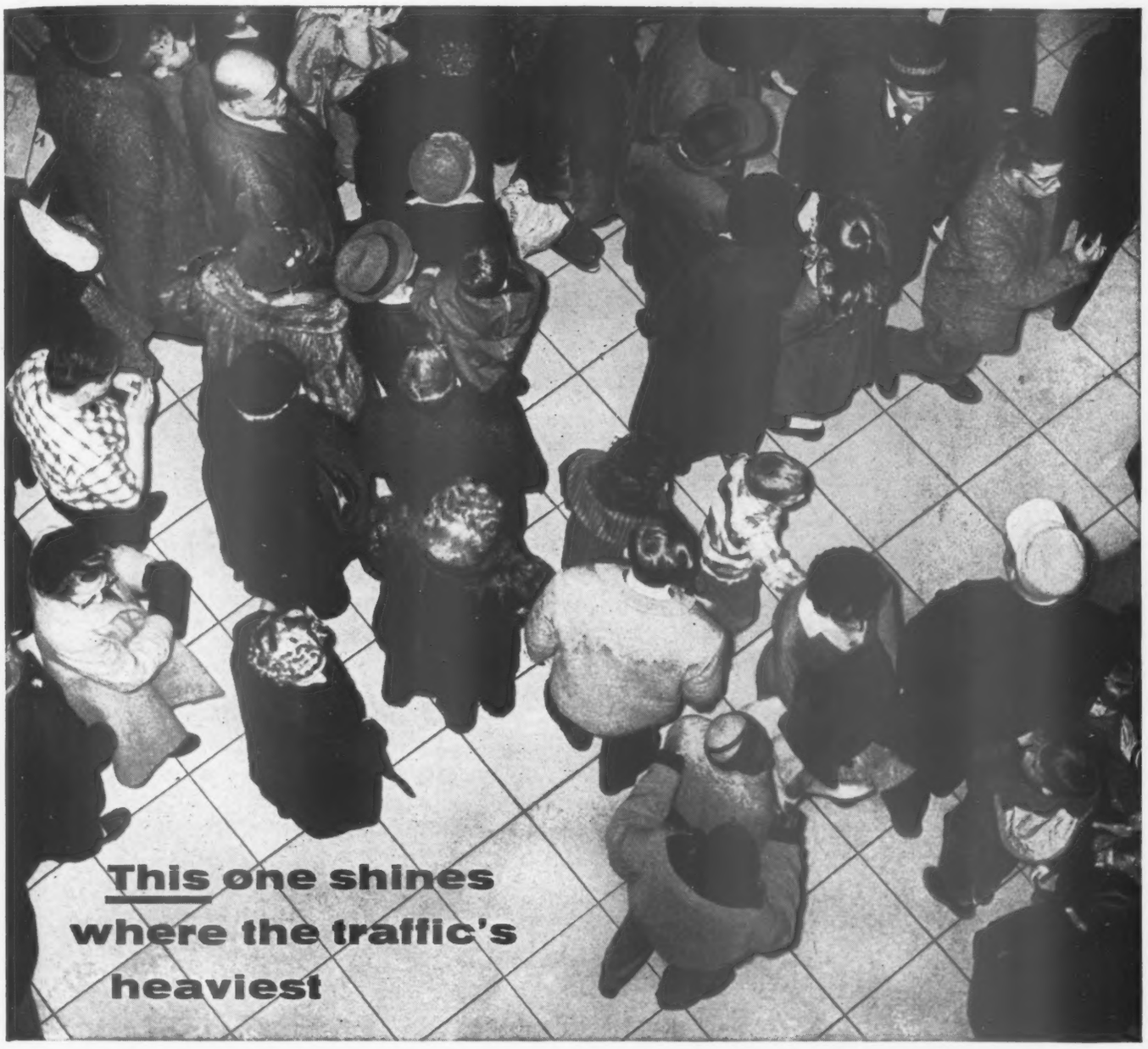
WATSON: No, and we knew they wouldn't. Our citizens' committee had made it abundantly clear that the public was still willing to pay the price for top quality education. By the way, our language labs are used for adult night classes too. These adult classes—now in their fifth year—have been tremendously helpful in gaining support for the regular day school program. More than 2,000 people are enrolled in evening classes. When a community uses its schools to that extent—we don't close until 11 p.m.—it's usually willing to pay the freight.

Q. Your language lab was added after Glenbrook had already been built. What can you say about the initial cost of construction?

WATSON: The cheapest way to build a school is to stack a series of cracker boxes, one upon the other. We tried to avoid that in Glenbrook. We felt that beauty and a certain amount of comfort could contribute a great deal to the educational function of our school. If you want to build into your schools something that your children can love and respect, you must pay a little more money for it. Our building is light, airy, has a lot of color. The students like it. As a result, they try to keep it attractive. We haven't had a case of vandalism reported since the school opened seven years ago.

Q. That's a record to be proud of, but how does it relate to the teaching function your school performs?

WATSON: Youngsters have to be helped to assume responsibility and



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THE COST OF A QUALITY HIGH SCHOOL PROGRAM

Here is what citizens of Northbrook and Glenview, Ill., paid for Glenbrook High School—and what it would have cost them had the school offered only the basic minimal program required by state law. The total cost, including site purchase, site development and equipment, came to $5,647,117. The cost of the building alone came to $4,847,000. Taxpayers were told before the bond vote on the high school that this figure could be trimmed, but only by cutting the building to a minimum. To do it, the following would have to be eliminated:

Swimming pool	**$ 500,000**	**Cost of building alone**	**$4,847,000**
Four large and four small physical education classrooms	**475,000**	**Deduct for minimum building**	**1,395,000**
Music and speech	**300,000**		
Counseling and health rooms	**120,000**		
	$1,395,000	**Estimated cost for minimum building**	**$3,452,000**

The difference of $1,395,000 represents the price the voters paid for the superior program they wanted.

In addition to building economies, certain reductions could have been made in the costs of operating Glenbrook's educational program (current staffing costs $870,250). But some cutting of the program would have been required to do it:

Drop band and orchestra	**$16,000**	**Provide less equipment—especially science, languages, industrial arts**	**10,000**
Drop speech and speech activities	**10,000**	**Eliminate language laboratory (prorated, total cost was $15,000)**	**7,500**
Drop internship	**6,000**	**Cut guidance and counseling services to absolute minimum**	**35,000**
Drop driver education (net cost to district after state aid)	**24,000**	**Reduce physical education by cutting weekly meetings from five to two through the elimination of swimming and some other sports**	**40,000**
Allow no sabbatical leaves	**6,500**		**$275,000**
Use only teachers with B.A.'s	**75,000**		
Use more beginning teachers	**10,000**		
Increase pupil teacher ratio by 5 pupils	**35,000**		

These cuts would have saved the average taxpayer about $10 annually. The district's residents have shown, however, that they want the activities retained so that their children will continue to have a top quality program available to them at Glenbrook.

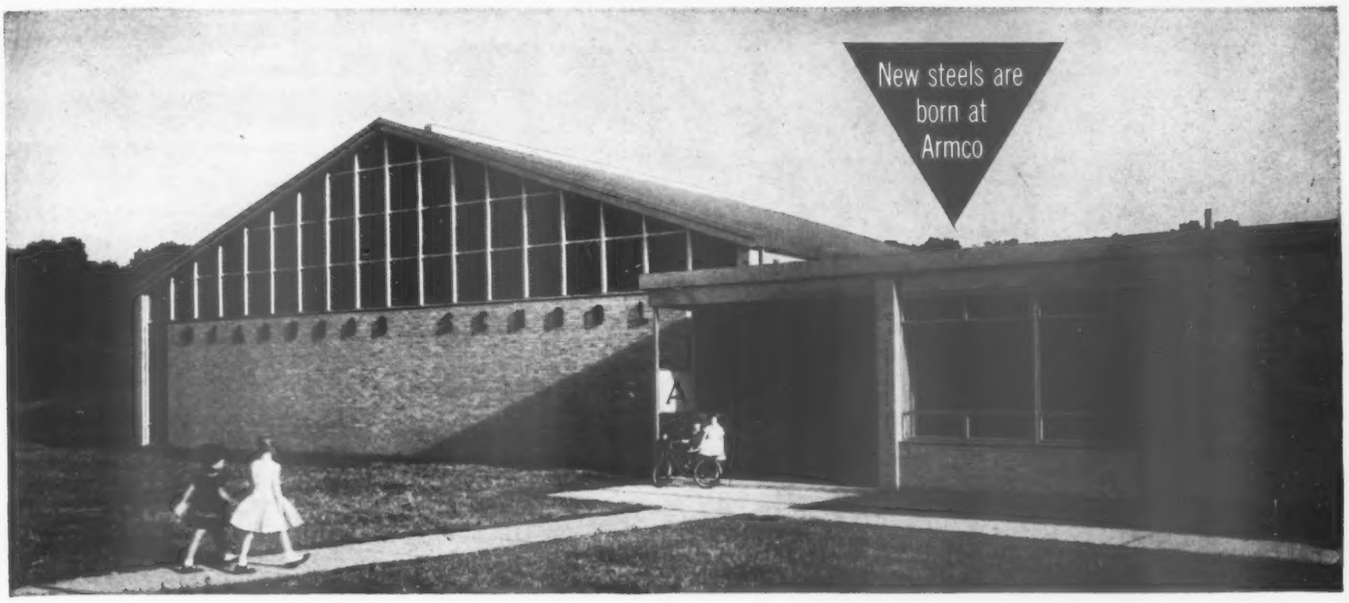
independence. This kind of training can often be accomplished in the classroom too. We have a rule at Glenbrook, for example, that if you drive a car, you must behave like a gentleman and follow safety rules. Our driver education program helps students learn and absorb these safety rules. But it's up to them to take it from there and practice driving courtesy and consideration for others.

Q. Isn't driver education potentially a "frill" subject that could profitably be lopped from the cost of running your school?

WATSON: I don't think our district's parents consider it a "frill." The last time we surveyed them on the subject, they were unanimous in their praise and thought the program should be continued. I would say that our driver education program has saved parents at least 10 times the tax money they have paid into it by cutting down on the insurance they pay.

Q. How about building costs not related to your academic program—your cafeteria, for example?

WATSON: A cafeteria is an expensive proposition. We estimate that our cafeteria, kitchens, etc., cost us $370,000 to build. But they enable us to serve well-balanced, 35¢ meals to 1,200 to 1,300 youngsters a day. You can't prepare a sack lunch for less than that. Our students never go off the school grounds from the time they arrive in the morning until they leave at the end of the day. Even if we didn't serve lunch, we'd still have to provide some kind of supervised eating space for those who would bring their lunches to school with them. Part of our $370,000 went into the construction of two big rooms that



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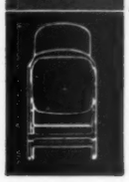

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seat about 300 people each. These rooms are used as study halls all day except during the noon hour when the doors leading into the kitchen are opened and the rooms become serving areas. After lunch, the rooms revert to study halls again.

Q. What single area of your school plant has proved the most costly?

WATSON: Physical education, without a doubt. It cost us $1.5 million to build our gyms, showers and lockers. There are presently 1,700 students enrolled in the high school; but we could conceivably handle up to 3,000 children in the same space, if necessary. One reason we put such emphasis on physical education is, again, a reflection of the community's desires. We run a physical fitness program, which we present on several different fronts. First are our standard physical education classes where typical units and games are taught. Next, we have a complete program of remedial therapy. We have people at Glenbrook who can take a weak arch, a pigeon-chest or round shoulders and really do something about it.

Q. Don't some elements in the community object that this is a medical function better performed by hospitals or clinics?

WATSON: We have never experienced any hostility toward it. In fact, we have had the opposite reaction—people in our community have acclaimed it. I think that's because they realize that our remedial therapy effort is just another prong in our total physical fitness program. We feel it's our responsibility to not only train our youngsters' minds, but their bodies as well. And, incidentally, to wear out their bodies wholesomely by the end of the day. We try to keep our youngsters around the school until 5:30 or 6:00 p.m., participating actively in a sports program which will help them use up their excess energies in wholesome ways. We have varsity, junior varsity and intramural programs, too.

Q. Have you been able to see the results of your physical fitness program?

WATSON: We have found that there is a definite correlation, for instance, between success in weight-lifting and success in academic work. We

AT KENT STATE WITH DELTA

Shop teachers go to school

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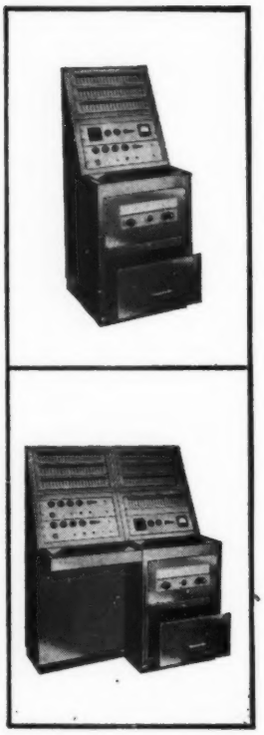

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try to build satisfactions into our youngsters—while we build their bodies—by helping them accomplish goals. A poor academic student may have been intimidated by academic work before, but once he finds he *can* accomplish other things—lift weights, for example—he won't be so afraid in the classroom.

Q. Dr. Watson, you have an expensive plant here and you are obviously making strong efforts to maintain a program of extremely high quality. Are you able to get the high caliber teachers such a program demands?

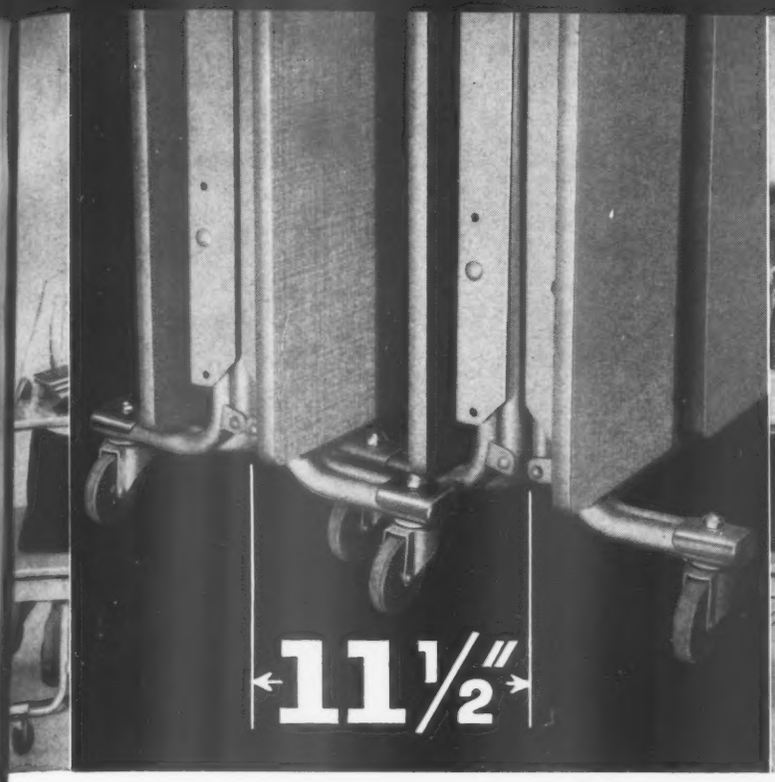
WATSON: Our building and program, of course, help us to attract top teachers. Let me give you an example. We spent $80,000 on faculty lounges when we built this school. We considered this a necessary and legitimate expense. It didn't make sense to us to pay top-notch people $8,000 and $10,000 a year and then not give them an opportunity to sit down occasionally, somewhere away from children. I confess that I'm not the most enthusiastic person in the world about the value of coffee breaks. But we keep coffee perking in our faculty dining room all morning long. And I see a great deal of consultation, committee work and new teacher orientation going on over the coffee cups in that relaxed, informal environment.

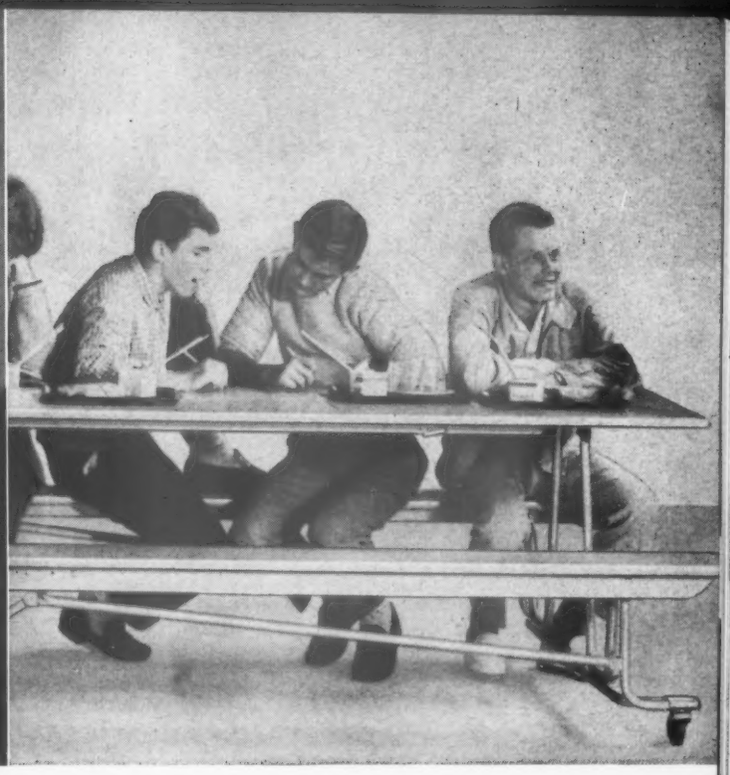
We make other efforts to guarantee a top teaching staff. Our teachers are not expected to be counselors—we have professionals hired for that job. Our teachers don't make announcements, collect money, sell tickets or year books. They teach. This means we have to spend some extra money to hire other people to do these chores. But this, again, goes back to knowing what your public wants. Our taxpayers wanted a top education for their children, so they bought and paid for a building to meet all their desires. It would be foolish now to diminish that education by not paying a few extra dollars a year to make sure that we have the best teachers in our schools and that they're doing the job they were hired to do.

Q. How close does Glenbrook come to the pattern for the comprehensive high school set down by Dr. James B. Conant?

WATSON: Originally, we had intended to build a comprehensive school,

continued on page 82





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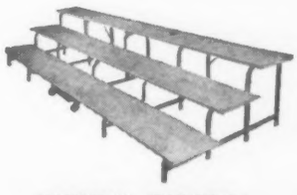

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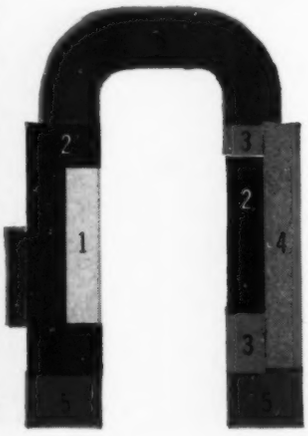

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Diagram shows actual 6-step expansion sequence of Pennsylvania State University's original PDM Stand from 2400-person capacity in 1934 (1) through additions in 1936 (2), 1937 (3), 1939 (4), 1948 (5) and 1949 (6) to a capacity of 30,000. In 1959-60, the entire structure was dismantled, moved to a new field and expanded to 45,000 capacity by the addition of new steel sections.

. . . to this in 1949

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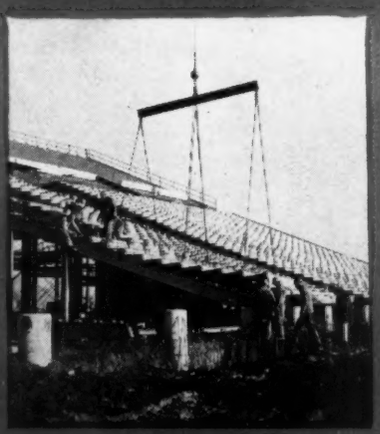
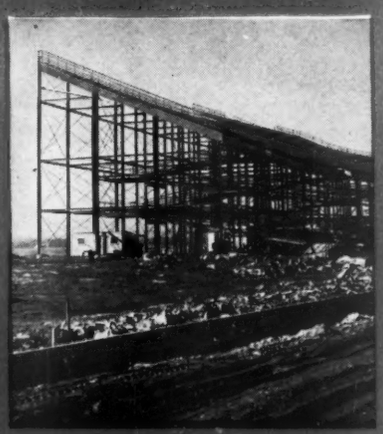


Installing original sections at new field location

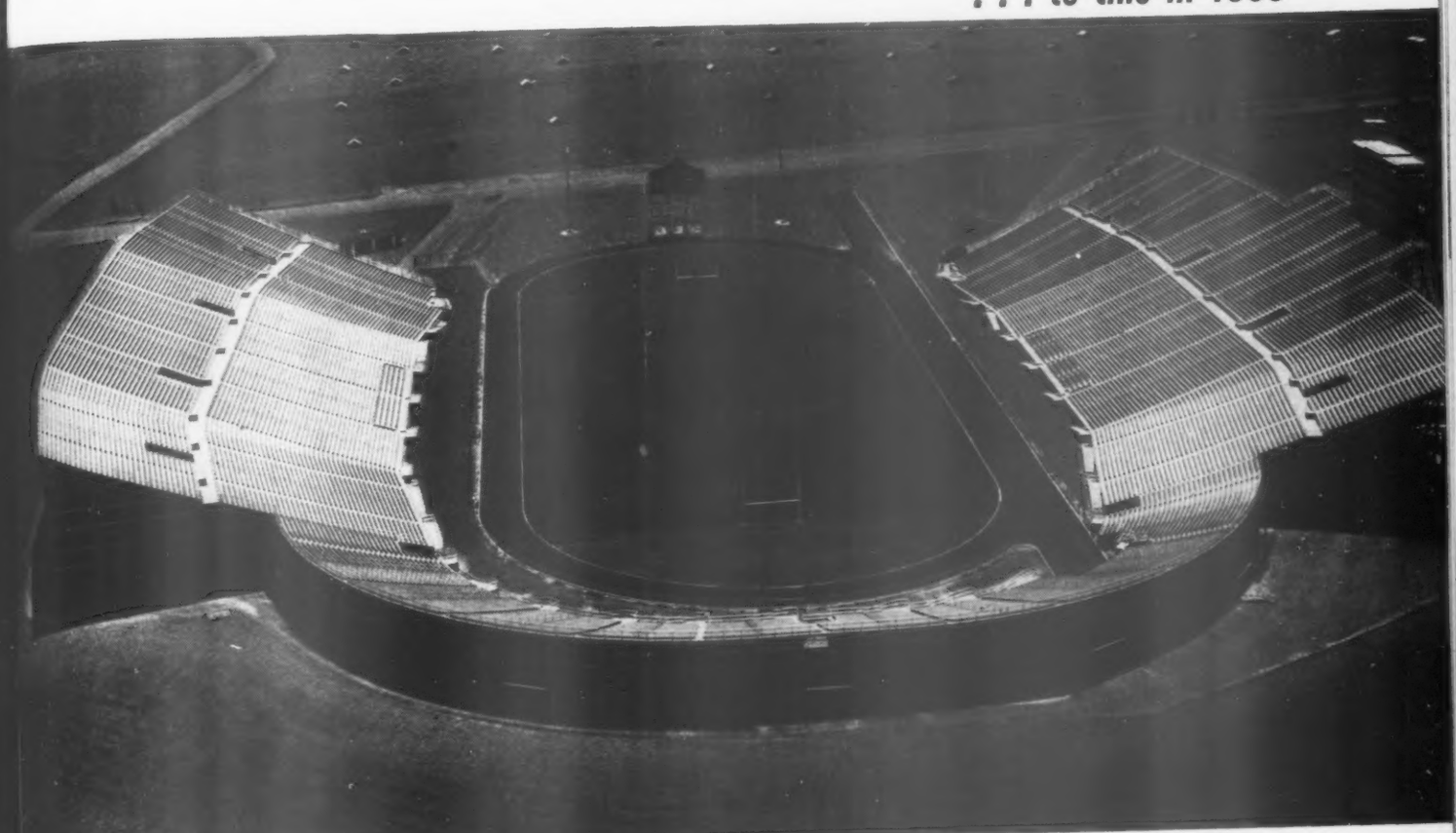


Adding new steel for increased stadium capacity

Completing the job at Penn State's New Beaver Field

AND HOW IT GREW!

. . . to this in 1960



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but with 85% of our students preparing for college, we decided that wouldn't be feasible. At the same time, we couldn't dare to overlook the other 15% comprising our school population. So we have, for example, an industrial arts program in the school. Now industrial arts facilities come high—we spent $219,000 for our shops alone. But even if only 5% of our students needed a program of this sort, we couldn't ignore them. We would have to make some provision for their education even if they were unsuited to a totally academic program. As a matter of fact, there are many college preparatory people who ought to know how to do some of the things taught in our industrial and home arts departments.

Q. What provisions have you made to handle anticipated increases in enrollment?

WATSON: Actually we could almost double our present enrollment of 1,700 and handle it easily, with some building additions and alterations. But we expect the present population of 40,000 in our two communities of Glenview and Northbrook to reach 100,000 in a few years. So we're studying ideas and plans for a second high school right now.

Q. How has your experience with Glenbrook affected your plans for the second school?

WATSON: The rapport we have established with the citizens in our district over the past seven years is helping us immeasurably in our planning. Lay committees are evaluating our present plant in order to determine what features should be built into our second school. We haven't approved plans yet, but I have a feeling we may end up with a school-within-a-school layout. We can no longer afford a high school for just 300 or 400 or 500 students. From the standpoint of economy, I'd say the cut-off point is now 2,000 or 2,500. Yet, our citizens' committees agree that we should keep our boys and girls in a situation where they can get to know each other—and their teachers—a little better than they could in an enormous high school. Here again, it is the awareness and involvement of our citizens in school problems that is helping us create the kind of schools they want and need. **End**

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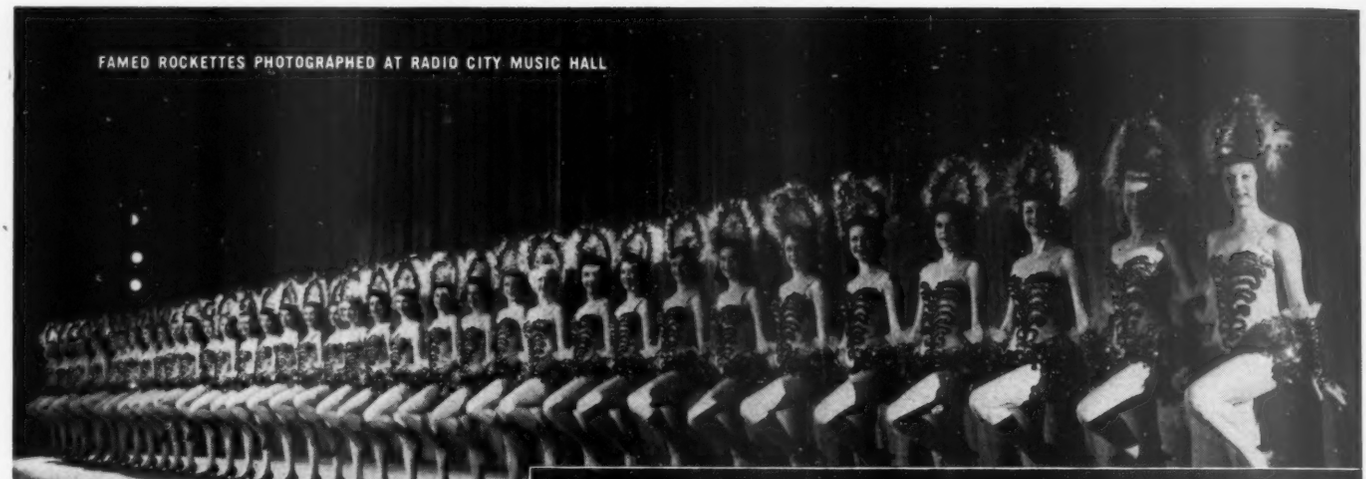

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How to keep driver training costs down

"Driver training courses are too costly. And they steal time from the academic program," claim its opponents. Here's how the Long Beach, N. Y., schools have successfully overcome both of these objections.

By PETER DI PAOLA *and* ROBERT MICHENFELDER

■ ■ ■ Driver training courses were ended in the Long Beach, N. Y., schools a year ago, because of parental demand. But, at the insistence of the very same parents, the course is being taught again now—on a different basis.

Our parents objected to driver training, not so much because it took time from school hours, but because it was too costly. Our eight-year-old program had to be abandoned—against the wishes of schoolmen—as an economy measure. This was in the fall of 1959.

The sudden change in the opinions of parents was the result of a law passed by the state legislature during its 1960 session. Under the new law, junior licenses—issued to 16-year-olds—were revoked, and the minimum driving age for anyone in New York State was put at 18.

There was one loophole in this sweeping legislation. Students who successfully completed a school-sponsored driver education course could receive their licenses when they were 17. This was all well and good, but Long Beach no longer had such a course.

Objections to driver training

The major objection to driver training in the schools, as already stated, was financial—it cost too much. But there were also other problems. Scheduling conflicts with other subjects had to be ironed out. The responsibility for maintenance of the training cars was a major headache. In addition, a one-semester course in high school, with yearly promotions, created a special midyear scheduling problem. And, finally, driver training courses held after regular schools hours (which would have solved many of the scheduling problems) played havoc with extracurricular activities, athletic events and coaching classes.

To meet all of these objections, we devised a totally new plan for teaching driver education. Under this program, we offer driver training during our seven-week summer session only. In addition, youngsters are taught to drive in cars owned by the instructors.

How summer plan works

The New York State syllabus in driver education requires that summer high school programs provide the following: 25 clock hours of classroom instruction, 14 clock hours of road training and eight clock hours of additional time divided between the first two.

It has always been considered desirable in Long Beach for driver training teachers to conduct both class and road training sessions rather than to have specialists in each. From past experience, we

COMPARATIVE COSTS FOR DRIVER EDUCATION

Long Beach, N. Y.

	School Year 1958-1959 2 Cars—10 Mos.	Summer 1960 4 Cars—7 Weeks
Salaries of Teachers	$15,290*	$3,000
Car Costs	2,345	475
Insurance	450	160
Total	$18,085	$3,635
Number of Pupils	222	120
Cost per Pupil	$81.46	$30.29

** Includes retirement and hospitalization contribution by board of education.*

knew it was best for each teacher to handle one class and three road training sessions of one hour each. This schedule fit well into our four-hour summer school day. It provided each teacher with a class of 24 students and six road groups of four students each, presumably the same 24 students. This, in turn, enabled each student to have 35 hours in the classroom, 17 hours on the road, and four-and-one-half hours behind the wheel. (This meets the state minimum but does not come up to the optimum program of six hours behind the wheel.)

A survey among students and high school graduates, 16 years of age or over, revealed that some 128 students would be eligible and interested in the summer offering. To accommodate the demand, five qualified teachers were recruited from our staff and from those of neighboring schools. To eliminate garaging and maintenance problems, cars were hired directly from these teachers for use during the length of the session.

Dual controls were installed in each car and insurance coverage was purchased through our district's insurance carrier which protects both teacher and school district at a nominal cost.

Advantages of summer plan

Although the program was originally restored to assist high school graduates under 18 who were commuting to local colleges, others have benefited, too. Special early groups have been scheduled for students who work full-time at summer jobs. Since a majority of these are already licensed, teachers are relieved of the necessity of teaching basic skills. They can devote more time, instead, to the important problems of attitudes, traffic analysis and advanced highway skills, areas often given insufficient attention. The longer summer school instruction period provides additional time that can be used more efficiently than the standard 43 minute period of the regular school schedule.

Human nature being what it is, both students and teachers seem to exercise greater care and attention in the use of personally owned equipment, resulting in less wear and tear on automobiles. Since the vehicles used vary widely in make and type, from five-passenger sedans to oversize suburbans, a greater variety of operational experiences are opened to the student.

Driver education during the summer session has won the complete approval of the community. Cost figures *(see box, page 85)* prove to the tax-minded citizen that a public school enterprise can be operated as efficiently as any local business.

School administrators in Long Beach support this solution, too. It is a flexible scheme and can accommodate any number of youngsters. Ordinarily a program of this type would suffer from the difficulty of acquiring sufficient cars for a short period of time. The system outlined here can be expanded to accommodate any number of students in any period of time, limited only by the number of teachers available. With future increased enrollments seemingly inevitable, the plan's flexibility is an invaluable asset. **End**

About the authors

Peter Di Paola is assistant to the superintendent of schools, Long Beach Public Schools, Long Beach, N. Y. **Robert Michenfelder** is chairman of related arts in the same school system.

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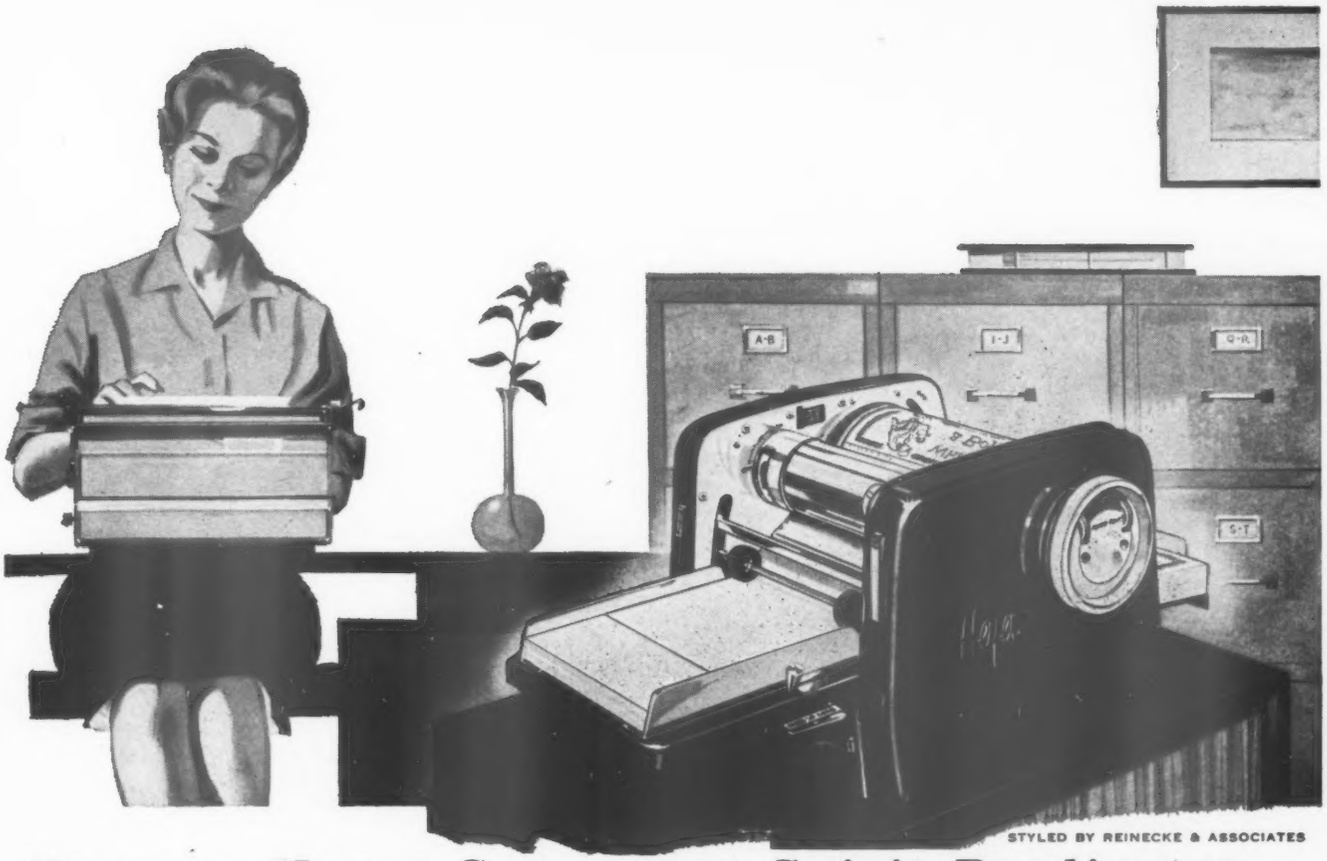

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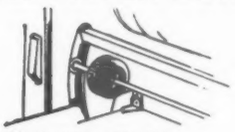

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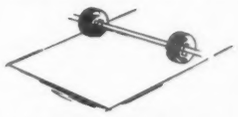

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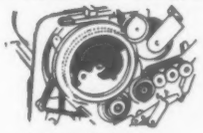

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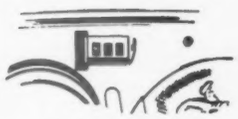

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Five superintendents plan

How big should a junior high school be? What grades should it contain? What are its aims? What should the curriculum include? How should the school be housed? Here are the answers of five experienced superintendents, meeting with a team of architects and consultants.

■ ■ ■ Take a visitor into any junior high school building around five o'clock in the afternoon, after the students have left. Let him look into all the classrooms, the special purpose areas, the administrative offices. Then ask him to guess the level of the school he is in.

Chances are, if he didn't know in advance, he will guess that he is in an elementary or high school. It is unlikely that he would see a single thing in that building that would say: "This is a junior high school."

The fact of the matter is that—with a very few exceptions—there are no outstanding junior high school buildings in this nation. Most are either glorified elementary structures or stripped down models of high schools.

One doesn't have to look far for confirmation of this fact. Educational Facilities Laboratories, for example, has as one of its appointed tasks, bringing to light interesting and important new developments in public school construction. To do this a series of pamphlets, called "Profiles of Significant Schools," is being issued. Not a single one of the schools profiled so far is a junior high school. When asked why, President Harold Gores replied: "We haven't seen any outstanding junior high schools."

This was the background to a conference late in June, jointly sponsored by the editors of SCHOOL MANAGEMENT and the architectural firm of Perkins and Will.

That conference brought together five superintendents who have recently built junior high schools or are in the process of building them. Two educational consultants—one of whom had been involved in the first junior high school experiments more than 40 years ago —also participated.

These men, prodded by the questions of two editors, examined the junior high school in all its facets, with the object of deciding just what is special about this school, and how it should be housed. On hand to interpret their ideas and to put them onto a drawing board, was a team of four architects.

The material in the following article is drawn from the tape-recorded transcript of this eight-hour conference. The people involved are identified on page 90. Starting on page 101 is a series of renderings by Architect William Brubaker, working in collaboration with Consultant Stanton Leggett. These attempt to present a junior high school that would satisfy the conference participants. On page 107 are the "rebuttal" statements of the five superintendents, evaluating how well Architect Brubaker has done in designing a school that meets the very special needs of junior high school students.

a junior high school

Q. The junior high school has existed in this country for more than 40 years. But it's hard to find agreement among educators about why it exists. Why should there be a junior high school, anyway?

BEATTY: I was involved indirectly in one of the first junior high schools, out in Berkeley, Calif. The Berkeley object was to try to breathe some life into the seventh and eighth grades. Up to that time they were largely a repetition of what the youngsters had been learning for the preceding six years, with a little expansion in the areas of percentage, bank interest and outmoded business practices. There were reviews in American history of what had already been taught; reviews of English application which had already been taught; reviews of this, reviews of that. The seventh and eighth grades, at that time, were really a very sterile area in the elementary school—one which was losing pupils very rapidly. Most kids stayed through the sixth grade; but the seventh and eighth grades had no holding power. Another quite practical reason for McKinley Junior High was that the old senior high was overcrowded and it was a relief to drop out the ninth grade.

Why a junior high?

Q. Then the real object of junior high schools, at first at least, was simply to hold students in school a little longer?

BEATTY: If that had been the only goal of the junior high, it would have disappeared long ago. Now, with laws requiring children to stay in school until they are 16, 17 or 18 years old, there would no longer be any need for it. When the first junior high school was established, a challenge was thrown out to its teachers to try to find a new and creative curriculum, especially for those grades. They wanted to give the younger children some opportunity for leadership, so they threw the ninth grade back into the junior high school level. The concept was that the demands on the ninth grader at that time were more in keeping with those of the seventh and eighth grades' maturity.

LEGGETT: Actually, the junior high school also came out of the fact that elementary education was taking six years instead of eight. There was an improvement of teaching to the point where you could drop two years out of the elementary program. I have the feeling that this is coming up again—that elementary education, as such, can be compressed even further with better teaching. In a few years, you may need a junior-junior high school to take care of the needs of the students.

GRAGG: One of the things we haven't mentioned in the origin of the junior high school was the idea of presenting to a youngster the so-called exploratory courses. These were meant to help him make up his mind about whether to be an academic major in senior high school or, go into business courses, or take vocational training. That was another purpose of the junior high school.

FESTA: In some cases, it still prevails.

DONOVAN: "Bridging the gap," was another rallying cry of the old junior high schools. But sometimes I think that instead of bridging the gap from the elementary to the high school we have simply created two gaps for students to get over.

Q. Dr. Beatty mentioned the three-year junior high school a moment ago and nobody took exception to it. Is everyone here in agreement that the junior high school is the seventh, eighth and ninth grades? Does everyone believe in the 6-3-3 setup?

What grades does it cover?

BEATTY: Does it make too much difference whether it's 6-3-3 or 6-2-4? Whether it's seventh and eighth grades or seventh, eighth and ninth? Is that a very different world?

GRAGG: Or sixth, seventh and eighth —is there some merit in that grouping?

PERKINS: I think we must remember that the junior high school was originated to take care of a particular animal at the beginning of his adolescent years. This is a special period because there are special changes taking place in these kids—biological and psychological.

GRAGG: I wonder whether the type of organization depends upon the type of community? The rural schools tend toward a 6-6 organization. The smaller cities and suburban schools tend toward a 6-3-3, or a junior high school plan as we seem to be discussing it. Your large cities and your private parochial schools tend toward the old plan of eight years of elementary school and four years of high school.

DONOVAN: That's not true about the big cities. We practically all have the 6-3-3 setup. I think St. Louis is one of the few cities that stands for 8-4.

Q. Mr. Gragg mentioned the 6-6 organization a moment ago. From an economic point of view alone, isn't there much to be said for this?

Conference participants—five superintendents, four architects, two consultants, two editors—left to right: Murphy, Lothrop,

WHO THEY ARE

BERNARD DONOVAN, *Assistant Superintendent, New York City*

FELIX FESTA, *Superintendent, New City, N. Y.*

WILLIAM GRAGG, *Superintendent, Ithaca, N. Y.*

PHILIP KOOPMAN, *Superintendent, Lower Merion, Pa.*

MALCOLM ROBERTSON, *Superintendent, Morristown, N. J.*

C. WILLIAM BRUBAKER, *Architect*

JAMES D. LOTHROP, *Architect*

A. WHITNEY MURPHY, *Architect*

LAWRENCE B. PERKINS, *Architect*

STANTON LEGGETT, *Consultant*

WILLARD W. BEATTY, *Consultant*

LEGGETT: There are some statistics on the economic cost of operating a 6-3-3 setup as opposed to a 6-6. The last time I read them there was no economy to be gained through the 6-6 organization.

Q. And yet you do have, in almost every high school, facilities that are used only part-time. You have auditoriums that are not used even part of each day. Gymnasiums may be used daily, but often by athletic teams, not by the school population as a whole. The same is true of cafeterias, science facilities, music rooms. Wouldn't it be sensible to build a classroom wing for junior high school students and let them use the high school facilities?

BEATTY: The idea that the junior high school can ride along on the surplus facilities of the senior high school is completely the bunk and entirely unfair to the junior high school children. If the senior high school wants to use the science laboratory, then the junior high school can do without it. If the senior high school wants more space in the gymnasium to rehearse the second team, then the junior high school can go without it. And so it is down the line. Junior high school students should have a building of their own, or they should have their fair share of the six-year school if the school is planned that way.

ROBERTSON: There are differences in the facilities. In the junior high school you need more places for kids to play and not so many basketball courts. There is a good reason for the junior high school in relation to an elementary school. It's based upon how children grow and mature. By the same token there's a good reason for the junior high school in relation to the high school. To mix them in a 6-6 organization simply defeats the whole idea of a junior high school.

KOOPMAN: I think the reasons given here are acceptable. It comes back, I believe, to that kind of biological foundation which makes this particular age not the age that can be self-contained in a classroom—as is commonly done with elementary children—yet not settled enough to be in a high school situation. These children must be in a school where they have plenty of opportunity to do things—shop, art, music, playgrounds. They must have room to move around.

LEGGETT: Most principals and

PHOTOS BY LAURENCE LUSTIG

Gragg, Brubaker, Beatty, Boytos, Robertson, Perkins, Donovan, Koopman, Festa, Leggett. Not shown: Abramson.

teachers who have to deal with a six-year high school feel that it is just too great a span of ages. You find this over and over again—and this applies also to the eight-year elementary schools. So many communities break this organization and create a middle school for the seventh, eighth and ninth grades.

What size school?

Q. How big should junior high schools be?

LEGGETT: In terms of size, other than in urban situations where you frequently have things which you can't control, I tend to think that something up to 900 students is right.

BEATTY: I would be inclined to agree. I'd say somewhere between 750 and 900 is about the maximum that I'd want in a junior high school.

FESTA: We have set our elementary schools at 600 capacity. Junior highs are to be 750 and the senior high, 1,200.

KOOPMAN: I think it depends a great deal on your conception of what you think the schools should be doing. Frankly I don't think it's so much the size of the school as the size of the groups working together within the school that matters.

Q. Are students old enough at junior high school age to be massed in schools of 2,000 or 3,000?

BEATTY: I have a feeling that one answer to your question of size is that, in general, the larger the group becomes the less an individual counts as an individual. The more the supervision of the school becomes mechanized, the less freedom can be allowed to the individual. In a school of 1,000 or less, there are some people in the institution who know everybody and a great deal of freedom can be allowed. As you get larger, there grows a feeling that you must keep track of these children. When you get over 2,000 kids in a building, if you're going to keep track of them, it's got to be pretty mechanical. You can't allow children to be circulating around freely, because they can get into areas where nobody knows who they are and nobody knows whether they belong there or not. If the child is truantly inclined, it's very easy for him to slip out and disappear.

PERKINS: I tend to go with the larger schools. An intermediate step is to segregate into smaller academic units and concentrate your athletics and your auditorium activities and your cafeteria in an area to which all students come. Of course, you can get to a size where even that concentration is bad and you should break up your gymnasiums, your shops and other things and duplicate them throughout the plant.

BEATTY: I have no objection to this "house plan" that Mr. Perkins is really describing. But at the point where you have to start duplicating everything, you might just as well build a complete second school somewhere else.

FESTA: I'd be interested in knowing what the reason is for making big schools? Is it economics? Can you justify a certain kind of activity only if you have numbers which will support a budget? If the value of that activity is important to American life—to democracy—shouldn't the American people somehow, at some time, be educated as to the values they are seeking? And if these values are important, provide them?

DONOVAN: In New York City we're trying to provide the finest facilities

"One of the purposes of the junior high school is to help in the recognition of individual differences."

GRAGG

within the people's ability to pay for them.

But in a city like ours we make no excuse about the fact that we have to practicalize a theoretical program. For example, we are having problems building junior high schools in the crowded borough of Manhattan. We can't take enough land to build the kind of school we would like to build.

We standardized at about 1,500-1,800 as our objective for junior high schools. We do it not only because of land and cost but because we think we need that size school in order to offer a variety of educational experiences to all our students at a reasonable cost.

ROBERTSON: I had the privilege of being a principal, for about 10 years or so, in a junior high school of 250. We offered more subjects, more electives, more variety than a neighboring senior high school that had a ninth grade and had 1,300 pupils. The people in my town were perfectly willing to pay for it. They thought they were getting some results from it.

BRUBAKER: Couldn't we bring Mr. Donovan and Mr. Robertson together by saying you could have your 1,800 student school and subdivide it into six units of 300 each?

DONOVAN: We don't object to breaking them up. In fact, we don't say there is anything sacred about 1,800. It just happens to be the way we're doing it. Academically, it seems to me you could break it down into quite a few segments.

KOOPMAN: There is a difference between the student in a large school who has a certain number of teachers for a year and a guidance counselor, and the cumulative impact of a bunch of teachers who know a student in a small school and who would recognize him around the school. We personally are trying to limit our junior high schools to 750 to 900 students because we think that this is where cost and opportunity meet.

GRAGG: This all points up the fact again that one of the purposes of the junior high school is to help in the recognition of individual differences.

What should be taught?

ROBERTSON: I think it's even deeper than that. I think the junior high school is the place to teach values—where we have to teach what democracy means in America. I have sat through several conferences lately on what to do for the so-called superior pupil and I leave every one with the same answer: give him more math, more science, more foreign languages. Nobody says, "He is going to be a leader in a democracy. Democracy is the kind of government that we want to prevail. Therefore, let's teach something about democracy and how to be a leader."

BEATTY: I agree with Mr. Robertson. The thing that shocks me is that we have sat here for so long and I haven't heard one reference to creative experience on the part of junior high school children—in music, dramatics, all those things that go toward an appreciation of the finer things of life. I'm very much afraid the people who are saying let's have more mathematics, more science, more foreign language, are really crushing out the more creative aspects of education.

DONOVAN: We want to keep the creative opportunities, such as art and music, in junior high schools. But there are people saying we should drop all of this, you know.

ROBERTSON: I don't care what they say. I'm not buying it! Our founding father said, "Democracy cannot continue, cannot operate, unless we have literate citizens." Then the schools very glibly say this isn't important. We're going to teach them more science, more mathematics, more language. Literacy is not just knowing how to read. It's knowing how to live too.

FESTA: This is all well and good. But let's not go overboard in that direction either. It is important to put more science, more mathematics, more foreign language, more everything into the junior high school. We

can't afford to teach junior high school without these things.

LEGGETT: Let's remember that what is to be taught in the junior high school is changing. Some of the things that used to be taught in the high school itself are now being pushed into the junior high school. Foreign languages are one example, biology is another. Algebra is being taught to many students in the eighth grade. And, on the other end of the scale, some of the things that have been taught previously in the junior high school are going to have to be pushed down into the elementary grades.

Q. We came together, originally, to discuss the architectural implications of the junior high school. I wonder if we can discuss now the facilities that would be needed in terms of the program that we expect to put into it? For example, what kind of classroom space do we need in a junior high school?

Team teaching

KOOPMAN: Let me tell you something that we're working on. It's program, but it has its effect on architecture. We started a program of regrouping our children in terms of where they were, without much regard for grade. We organized this around a team of teachers—four teachers for the four major areas, of language, arts, social studies, mathematics and science. These four people have approximately 110 children on their team.

Q. Does this take a particular kind of architecture?

KOOPMAN: We started this program in a traditional building. But it did have implications for our new Welsh Valley Junior High School *(see plan, page 97)*. It affected the architecture because we wanted to be able to provide the teachers with places in which to work and because we wanted the students grouped together. We're trying to make this school experience a cohesive kind of thing that starts from the kind of values that Mr. Robertson was referring to—the social and moral values on which one operates. I think we've been rather successful.

The team idea has worked so well, in fact, that 90% of the children who used to go to the office or the guidance department don't go there anymore. They are able to find the guidance they need in their teacher-teams. I am now considering a request to drop our guidance people in this junior high school, because the cohesive team organization has absorbed most of their guidance functions.

"The idea that the junior high school can ride along on the surplus facilities of the senior high, is completely the bunk . . ."

BEATTY

Q. Are you using then, at the junior high school level, something of what has come to be known as the Trump plan?

KOOPMAN: We've been doing this for five years. I suppose a lot of what we're doing is contained in what Trump has drawn together in his writings. But these things we've discovered for ourselves. For example, we're having some experiences in large group instruction. We're feeling our way a little in individual projects. In our new building, the organization is not by departments. Instead we have clusters of classrooms which include science rooms, language arts rooms and math rooms. We foresee a lot of possibilities in this program. We think we can make more adjustments to individual differences than we ever have before.

How many classrooms?

Q. How many classrooms do you need in a junior high school of 750 to 900 students?

ROBERTSON: I'd say 14 or 15.

KOOPMAN: We feel that we need 10 classrooms for each of our groups of 250 students. So for us, it would work out to about 30 classrooms.

BEATTY: I'll say this. You should always lean to the side of more—not less—classrooms in your building. Many districts have skimped on classrooms. Now they find they don't have enough classrooms to provide an adequate variety of instruction.

ROBERTSON: Let me throw in one other thing. I think we're very poor salesmen. I think we use the wrong terminology. You asked me a question and I answered it. I shouldn't have. I should have said that the gymnasium is a classroom. So is the science laboratory and the library. A classroom is simply an area where learning takes place.

FESTA: You know the way New York State gets around that? They talk about "teaching stations."

BRUBAKER: This keeps coming back to program. We can build schools

with any number of classrooms. I am using classrooms in the conventional sense. For example, we have done one secondary school with 450 students, which will have six classrooms and 12 offices in the academic section, exclusive of halls and special rooms. *Six* classrooms. It sounds absolutely crazy! But if you look at their program—what they are trying to do—it makes sense. You must determine the number of rooms in terms of what your program is.

ROBERTSON: I agree. Look at the diversity you have right here. Here's a man who says he wants 30 in a building. I say we want 14. I don't think I'm right and he's wrong. We're running different programs so we each feel that we have found the right number of classrooms. For example, I'd like to hear Dr. Koopman describe a typical day's run-through of a student in his setup, from the time he arrives in school until he goes home. Then maybe we'll get a better idea of why he needs 30 classrooms.

KOOPMAN: Typically a student will go to his first class when he comes to school. We do not have homerooms. Announcements are made just as though the student were in the homeroom. He has four academic classes a day. Most of these academic groups actually meet six periods a week. There is one double period built in for project work —a creative type of thing—or testing. Other hours of the day are taken up with lunch, music, physical education and art. The art teacher comes to the all-purpose room and all the art material is in that building for the teams to use. The student goes to the music room—instrumental music or vocal music. He goes to the cafeteria at noon. He goes out to shop and to physical education.

GRAGG: When does this student mix with students from the other units—or doesn't he?

KOOPMAN: He doesn't, except in his experiences in the auditorium and the dining room. There are, of course, all-school activities, such as the sports program. You get as many children in music, orchestra and things of that sort as possible. But in general, our classrooms are the center of learning—the place where the team operates. Therefore, naturally, we do put a great deal of emphasis on our need for classrooms.

Q. How about some of the special facilities in junior high schools? For example, is it necessary to have science labs?

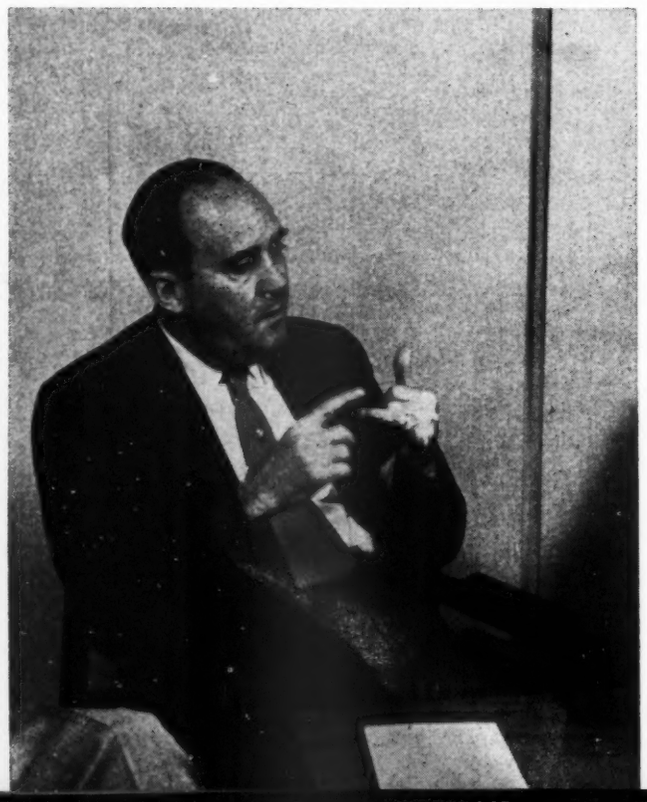
ROBERTSON: If a student cannot discover for himself that water boils at 212 degrees, there is not much you can do with your program but read from a book and ask is this right, is this wrong. To do otherwise, you need laboratory equipment.

DONOVAN: I would say at the junior high school level that any science laboratory can be multi-purpose. It can serve as a theater for almost any experiment in any scientific field that you might select. You're not going into very specific testing in chemistry, for example. You're not conducting any advanced physical experiments. But you are learning certain principles that underlie all of these sciences. A good laboratory—with water, gas, electrical connections and adequate experimental materials can serve anything you may want to do. And, incidentally, if you have laboratories with facilities of this sort, you can afford to have enough laboratories so that all students get a chance to carry out experiments.

Q. What kind of facilities would you want for the arts?

PERKINS: I keep thinking of an art center in a junior high school where more than one thing can be done. A center where a kid goes in with a problem, or something he wants to do, not because he's been assigned to make a tie rack that week.

BEATTY: I would like to throw this out: On the junior high school level, I think there should be no distinction between what boys and girls study in the arts area. There are



"Junior high schools need good general laboratories so that students can explore all the sciences."

DONOVAN

"The junior high school is not a farm club for the senior high."

PERKINS

plenty of boys who want to learn how to cook and there are plenty of girls who want to learn how to use tools. There's no reason why an arts area of this kind can't be used by both boys and girls.

ROBERTSON: For a long time we've had boys cooking and girls in shop. It doesn't make sense to say homemaking is for girls and shop is for boys.

Planning for the arts

LEGGETT: We have worked in one interesting school that has the whole art area together. There is a shop, an art room and homemaking center—three rooms together. They have a common display place. Curiously, after a few years, the three teachers developed a common program that was quite significant, I thought, for students on the high school level. I think the fact that there was a unity to the area in which they worked had some influence on what they did.

BRUBAKER: We have carried out this art center idea in some of our schools. *(See plan, page 103.)* They've been very successful. The teachers like them, the students like them.

LEGGETT: I am intrigued by the thought that you don't have to schedule these art areas to the full, either. Good scheduling would have them free a good deal of the time so that they could be used by students who were working on a particular project. Maybe they're building some apparatus for the lab or they're interested in doing some painting or something else. The arts center should be available to them.

KOOPMAN: That's one of the advantages of the team. Two teachers can agree that for half a day a group of children can go on with some project they are developing. This could be in the art center. By having this kind of teacher organization, you can facilitate using the art center—and any other areas of the school—more fully and properly.

A different library?

GRAGG: As long as we're talking about centers in a junior high school, I'd like to throw out one thought. What would you say of a junior high school that was centered around its library?

ROBERTSON: That always sounds like a good idea because it seems to emphasize the library. But in my experience, it's not the *place* of the library that counts, it's the administration of the building.

LEGGETT: I think junior high school libraries are something very special. One that I found very interesting was a resource center in a 600-pupil junior high school. This library is characterized by book carts. The school is divided into buildings and each building has a large room in which, on occasion, you will see five or six book carts lined up and a couple of tables and chairs in the middle. The books are always being used. They can be found in the classrooms, too. Here's a perfect example of what Mr. Robertson was talking about. It's not where you build the library or how you build it but how you plan to use it that makes the difference.

ROBERTSON: That's the theory on which we're basing our junior high school now. We have a library and we have a librarian. But more and more we are building individual libraries within rooms. The science rooms have science libraries, the language rooms have language libraries. Of course, it means we must provide extra space and shelving in the classrooms but this seems a small price to pay to be sure that books are used as they should be.

BEATTY: A library designed for a junior high school, I think, should be the central *artistic* feature of the school. Something that attracts kids to just want to be there. And there should be freedom on the part of the staff to let them be there.

GRAGG: I certainly agree with everything that has been said here. I used to have a library in one of my schools that was a place where you guarded books from the children. They tried to run a junior high school library as you might run a

public or university library. Junior high school libraries should not be places where books are guarded but should be places where students and teachers can go to get information, to get help, to get books.

BEATTY: While we're still on the subject of libraries, I think paperback books are one of the greatest things that has happened to schools. The last time I was a superintendent, I was able to purchase a whole bunch of them and I brought these paperbacks into the schools. I said to the teachers, "Don't log these in. Don't try to keep track of them." I just wanted to put them out into the hands of the students. And it worked. We didn't get all our books back, but we didn't need to. They weren't that expensive. We could afford to make them easily available to all the students. I've never seen so many students read so many books in my life as when we made them available in this form.

How much exercise?

Q. How about some of the other special purpose areas, such as gymnasiums, cafeterias and auditoriums?

ROBERTSON: My own private theory is that every junior high school student should have gym every day of the week. Now when you start out with this as a purpose, then you don't build one double-station gym. I think you have to have at least four stations if every kid is going to have gym once a day every day of the week.

I think every student in the junior high school should have the privilege of participating in every form of athletics. It should be a completely intramural program. The only way you can assure that, is by building a gymnasium that isn't big enough to be used for inter-scholastic sports but is big enough to supply facilities for intra-mural basketball, volleyball and anything else you want.

BRUBAKER: I'm not even sure we want to build a basketball floor for a junior high school.

LEGGETT: Gymnasiums, you know, are really only for winter sports—bad weather sports. Actually, if you figure it out, you can get more kids on an ice rink outdoors in the wintertime for fairly low cost than you can get exercising in any gymnasium. And with plastic pipes, you can do it inexpensively.

The same thing is true in the warmer months. A swimming pool will hold more kids than almost anything else in terms of the number that really exercise. If the object of your junior high school sports program is to build winning teams for the state championship, then you're going to want a professional basketball floor. But if your object is to see to it that every student gets some exercise every day of the week, and that he gets an opportunity to participate in different kinds of sports, then I think the gymnasium is less important. It would be more important to have a swimming pool and an ice skating rink.

PERKINS: The junior high school is not the farm club for a high school.

FESTA: I agree to that. We want our junior high school athletic program to be a physical education program, not an all-out competitive one.

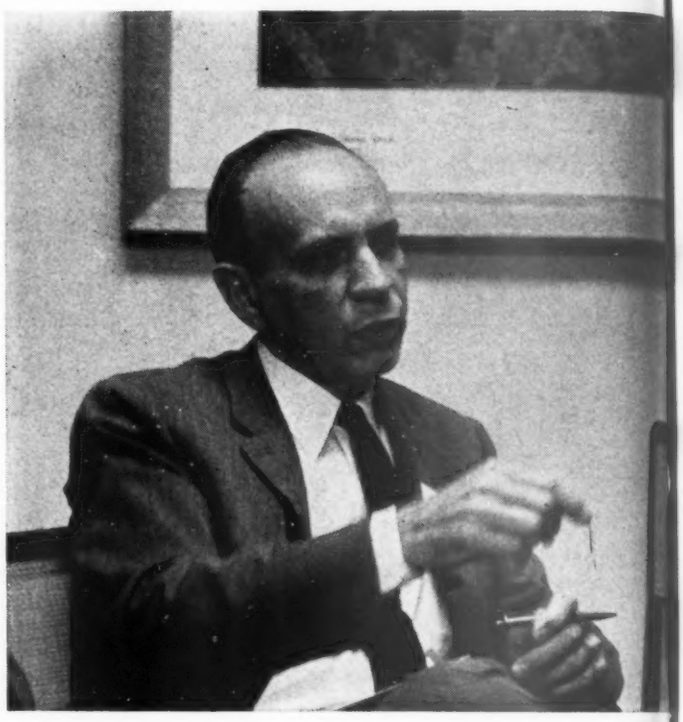
KOOPMAN: We pulled our junior high schools out of the league in the Philadelphia suburban area. We don't believe in interscholastic sports at this age.

ROBERTSON: New Jersey is certainly against it. In fact the athletic association of the state has practically demanded that junior high schools keep out of all competition.

KOOPMAN: A good junior high school gymnasium—and I do think you need a gymnasium, particularly in my part of the country—ought to be a place where you have running, gymnastics and trampoline work as well as basketball. There should be an opportunity for big muscle activity for every child, to a point where he is in better physical condition as a result of participating in it. It should not be allowed to deteriorate into nothing but basketball, basketball, basketball all year long—which it does in the hands of some physical education people.

BEATTY: As long as we're talking about gymnasiums, I'd like to knock one thing on the head right now. That's the idea of a multi-purpose room that combines the gymnasium

"I think it's valuable for kids to be able to see green grass and blue sky. I would want air conditioning, but not if it means a windowless-box school."
ROBERTSON



with the cafeteria or something like that. In the junior high school particularly, the gymnasium should be available for use as a gymnasium all day long. It is the very worst room to combine with any other. A cafetorium, I think, is an acceptable and economical way to get two rooms in one. But the gymnasium should never be combined with any other.

Q. Have we pretty much covered the junior high school then?

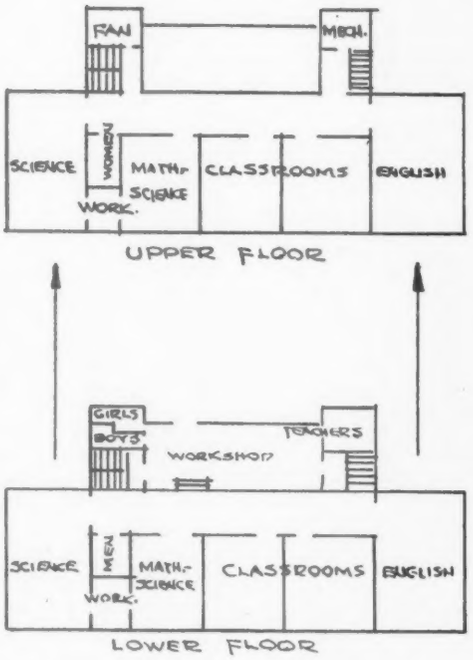
KOOPMAN: I would mention another idea. I think it has a great psychological influence on the children and on the parents too if a junior high school, on an exterior and interior scale, expresses the idea that it is a school for people who are less than adults. This is something that doesn't cost a dime. If the building is not overwhelming, it can make all the difference in the world to a child.

An ideal building

ROBERTSON: I'd be willing to verbally sketch a junior high school that I would like. But this is merely my opinion. It would suit my community. Somebody else having an entirely different problem wouldn't want to build this kind at all.

I'd like to have 30 to 40 acres. I would like to have a building all on one floor if it were possible. I would like it to be a building that would be very pleasant to look at. I think it should have beauty in every single line—the best the architect has to offer, absolutely the finest. I mean proportion in line and function and anything else he can put into it—color, shape, form, anything. Remember, such beauty doesn't cost a single penny more.

At this moment, I'd be perfectly content to have standard size classrooms. I would want junior high school children to have locker facilities for their belongings—not desk shelves as they have in elementary schools. I would want them to have several big play areas outdoors, about half of which would be macadam. I would want them to have excellent locker and shower facilities and a gym large enough to give them a period a day every day in the week. I would want all kinds of shop experience—wood, metal, handcraft, leather, jewelry-making—practically anything that a kid could devise in the way of arts and crafts.



Classroom wing of Welsh Valley school encourages team teaching idea.

"We found we could provide a better program through team teaching. Our most recent school was built with this idea in mind." (See plan, above.)
KOOPMAN

I would very definitely want general shops. I would want terrific storage space for every single solitary activity in the building. I would want to have storage space for materials, for projects, for plans. At this moment I would want two home economics rooms—one for foods and one for sewing. I wouldn't want any so-called family rooms.

Still in the shop area, I would want at least two art rooms. I would want the art kids to be absolutely everything from the beginning to the end in all kinds of arts. If I were lucky enough to staff it, I would have a traditionalist and a modernist on my art staff. I think we should have one room devoted to instrumental music and another devoted to choral music.

There should be an auditorium. It should be completely fitted out for use in debate, public speaking, for small dramatic groups. It should have sufficient dressing rooms. It should have a place for the band to make an appearance, if this is what the band wants to do. And if the band is going to take part in some

"It is important to put more science, more mathematics, more foreign language . . . into the program. We can't afford to leave them out of the junior high school."
FESTA

kind of musical production, it should have a pit big enough to use.

I would certainly want to have a library. One that has all the visual aids—pictures, filmstrips, tapes, the whole works. I would hope to have a cafeteria small enough so that we would have to use it for three lunch periods—three shifts.

Until we get further into team teaching, I would want a decent place for parents to meet the guidance counselors and for teachers to have conferences with the kids. I would want to have a language laboratory where a kid could go and sit and listen. Then, with just a little extra planning, I would want the building so adapted that it could be used at night by community groups, through the installation of gates and spaces for hanging hats and coats. I would want a lobby sufficiently big so that it could almost be a commons room for the kids. I would want them to be able to look out and see God's green trees and green grass and the blue sky. A couple of fireplaces and some picnic tables on the grounds might be well, too. But this is my idea for my school district and for my purposes. It might not fit anybody else.

Modifying the ideal

DONOVAN: Except for the 30-40 acres, this is almost exactly what we are building into our junior highs.

KOOPMAN: How large an auditorium would you want?

ROBERTSON: I'd want an auditorium for about 600. Six hundred is small enough to be homey and you can get pretty good acoustics. If you couldn't house the whole school in it at one time, I don't think this would be any tragedy. I think that when kids have worked for weeks and weeks to put on a production, if they give it three times—once for one-half the school, once for the other half and once for the parents—it doesn't do them a bit of harm.

KOOPMAN: I think I would differ with you there. I believe I'd go the rest of the way and make my auditorium capacity close to 100% of enrollment.

LEGGETT: I think the auditoriums in junior highs particularly, and in schools generally, are getting far too elaborate. There ought to be the kind of auditorium that is designed much like a workshop. The old country barn summer theater thing is an awfully good school auditorium. You can do almost anything you want to in it.

BEATTY: In your junior high school do you want enough classrooms so that each teacher has her classroom teaching station, or will you have some traveling teachers?

ROBERTSON: I don't have any traveling teachers. I still believe in homeroom, whether I'm archaic or not. I think it can be operated to advantage and I think it means something to kids if you operate it to advantage. By that I don't mean five minutes of homeroom a day. I mean maybe 15 minutes in the morning and 40 minutes at the close of the day for specific purposes. But then, you see, this hinges on program again.

Don't forget typing

FESTA: In general, I think I would agree with the facilities you have named. I'm not so sure about the use of the various rooms. I don't think we intend to agree on the use of the rooms. But the building you have sketched, in general, would certainly fit my needs. I would add one thing which you probably forgot—business education.

ROBERTSON: A typing room certainly. Little office machines.

LEGGETT: There's a strong tendency to put personal typing into the junior high school. So this wouldn't necessarily be business education only. As a matter of fact, in a properly run junior high school, a typing room might be one of the busiest areas in the whole school. I would like to take exception to one other thing that Mr. Robertson has outlined. I'm not so interested in having a central cafeteria. I think of the possibility of decentralizing the dining room around the school—moving the food. I think it has some real virtues.

BRUBAKER: You might combine the dining room with this commons lobby area that Mr. Robertson spoke of. That lobby is used mainly at night so this could be a dining lobby, a multi-purpose area.

ROBERTSON: Now you're getting specific. I would place my cafeteria in

such a place in the building that you could unload all the supplies for the shop, for general school supplies, for the boiler room and for the cafeteria all from one driveway. It would be somewhere where the kids could not see the trucks coming in. But this, of course, is getting pretty specific and down to design details.

BEATTY: I think it's Dr. Leggett's idea that the food would be cooked in a central place but that the cooked food would be distributed by truck to commons areas around the school—three or four places where feeding would take place.

What size classrooms?

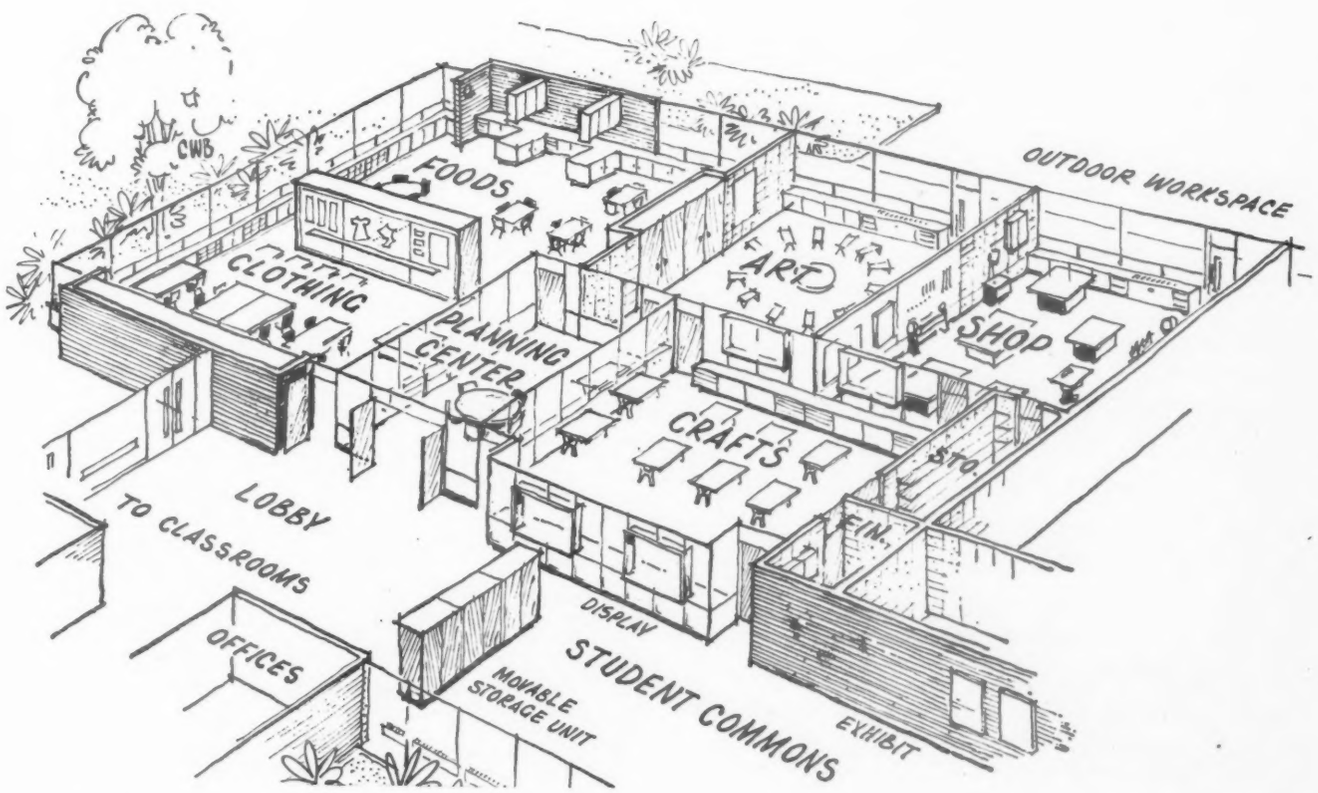
Q. How about Mr. Robertson's statement on standard size classrooms? Does everybody accept that?

KOOPMAN: That's one of three areas that I felt should be examined carefully. I think if we were building another junior high school we would want to repeat the cluster of teachers and children without any doubt. It has made team teaching much easier. The second thing I would want to do is to go even further in varying the size of the classrooms. I would want to provide for the possibility of altering the building at low cost in order to vary them still more. I think that a great number of seventh, eighth and ninth graders will very quickly project themselves into self-directed learning programs. I think a lot of inquiry has to be made into the possibilities of such self-teaching devices as tape-recorders, language labs, teaching machines. These are going to come into our schools in the next 25 years, and the schools we build now should be constructed in such a way that you can convert them or modify them to make the most possible use of these teaching aids. The third area I would want to examine is the whole matter of covered athletic space. I use that term rather than field house or gymnasium.

ROBERTSON: I want to go back to my original premise. I agree very definitely with what has been said about facilities for individual and small group work. But if you schedule any building 80% of the time, as I would like, you always have 20% of your building empty. You don't want only classrooms empty. You may want shop empty or art rooms empty. You might want the music rooms empty. So, while it's entirely possible to build a lot of small spaces, if you're not burdened with overcrowding and you're scheduling only 80% of the time, you get 20% of your building free, wide and handsome. There is nothing to say that these spaces can't be used for individual study or for anything else you want to do in them.

BEATTY: Talking about having your building 80% used, if you have a growing population you won't have an 80% building any more. So, I still think it's good to have some small rooms—some rooms of vari-

A unified arts center—with separate, adjacent space for shops, crafts, art, home economics—has proved successful in Sinclair Junior High School, Englewood, Col. Both teachers and students are enthused about these facilities.



"I'm not even sure junior high schools need a basketball floor. That's not the prime reason for having a gymnasium."

BRUBAKER

ous sizes—that can be used for special purposes when you need them.

Q. Would you want to air condition this building?

ROBERTSON: Certainly I'd want air conditioning. But not at the expense of other things. Air conditioning is important to a school not because it can save money but because it can make it easier for students and teachers to work. I think it's valuable for kids to be able to see green grass and blue sky. This is part of the educational process too. I would want air conditioning but I would want to air condition the school that I have designed, not a windowless box.

Is a junior high expensive?

Q. How much does it cost to build a junior high school? Does it cost as much as a senior high school for approximately the same population?

ROBERTSON: I don't think there would be any great difference. We've had some experience with this recently and I checked into other school districts in our area. There's very little difference between the cost of a junior high school and a senior high school.

KOOPMAN: I think you can save a little money on the junior high school, but not an awful lot.

BEATTY: If we were going to build the kind of high school that Mr. Robertson has described here, he is putting capacity into gymnasiums that he is leaving out of his auditorium. If he were building a senior high, he would reverse the areas. I don't think there is a fraction of a difference between the two buildings in terms of cost.

FESTA: Equipping the science laboratories can be less expensive in a junior high. Equipping the shops and home economics facilities is less expensive, too. You might save $100,000 on that bunch—certainly no more than that.

Q. Would we be right then in saying that the junior high school—the one you like—in many ways approaches a senior high school? It seems much closer to a senior high school than to an elementary school.

ROBERTSON: I'd go further than that. About the only difference between a junior high and a senior high in big things is that in the senior high you have a chemistry lab as a chemistry lab and a physics lab as a physics lab, if you are big enough; otherwise you have a combination. Aside from that, anything you have in a senior high, if you want to have a good program, you have in a junior high. Of course, as Mr. Beatty has already pointed out, we accept the smaller auditorium in the junior high school in exchange for more gymnasium area.

BEATTY: I think we would all agree that the junior high school—and I really don't like that name—is much more closely akin to a high school than it is to an elementary school. I think it would be pretty impossible to use an elementary school for a good junior high school program. On the other hand, a high school is not exactly what the doctor ordered for a junior high. I think Mr. Koopman hit upon it when he suggested earlier that a junior high school should not seem so hard and forbidding as a senior high school might. A junior high school should be smaller—both in number of pupils and the size of the school itself. From both the inside and the outside it should express the idea that it is not quite as sophisticated a building as the senior high school. The junior high school has got to keep a warmth about it.

"Junior high school libraries are something very special. What counts is how you use them, not how you plan or build them."

LEGGETT

"Middle School" for tomorrow

SUCCESSOR TO THE JUNIOR HIGH SCHOOL

How should you house a junior high school? Following the White Plains conference, Architect Brubaker and Consultant Leggett drew up their idea of a "middle school" that would make everyone happy. Their sketches are presented on this and the following pages.

PROGRAM

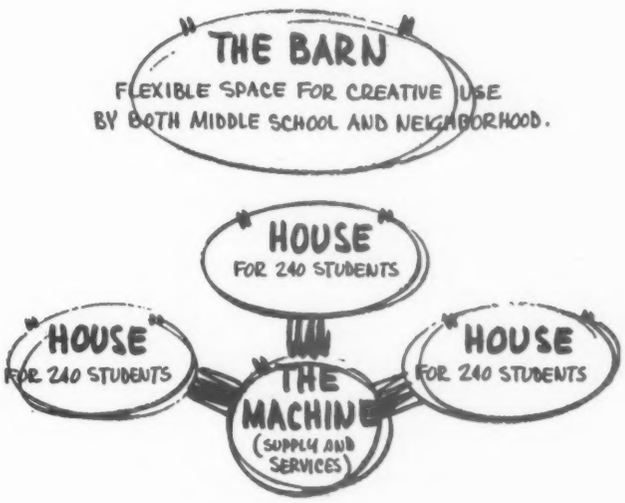
Each middle school provides for the social and academic needs, interests and desires of 720 students.

ORGANIZATION

Three "houses," each with 240 seventh, eighth and ninth grade students, plus common facilities.

DESIGN COMPONENTS

A "house" of varied, flexible classrooms.
A "machine" for service and supply functions.
A "barn" for creative assembly and exercise.


THE BARN
FLEXIBLE SPACE FOR CREATIVE USE BY BOTH MIDDLE SCHOOL AND NEIGHBORHOOD.
HOUSE FOR 240 STUDENTS
HOUSE FOR 240 STUDENTS
HOUSE FOR 240 STUDENTS
THE MACHINE (SUPPLY AND SERVICES)

BUILDING BLOCKS Here are the components that make up your middle school. They can be arranged in any way that best suits your needs, your program, your community, the shape of your land, your local building codes and your budget.

The key to middle school design is flexibility. As needs change, so do programs. Enrollments vary, too, and groupings change with them. Adaptable facilities, therefore, are essential. Rigid schedules have no place here. Emphasis is placed, instead, on the individual. The components are designed with this in mind

Each "house" consists of 240 students of middle school age, plus a team of teachers. The three houses share common facilities: "the barn," an adaptable shelter (theatre space and swimming pool) to encourage the natural creativity of pupils; and "the machine," to provide supplies and services. Mechanical and electrical aids will be used liberally in order to free teachers for program planning and individual student contact.

please turn page

COMPONENT 1

"The House"

■ Each house provides spaces adaptable to large and small group work as well as individual study. While details can vary with the particular school, these are the general space and facility requirements:

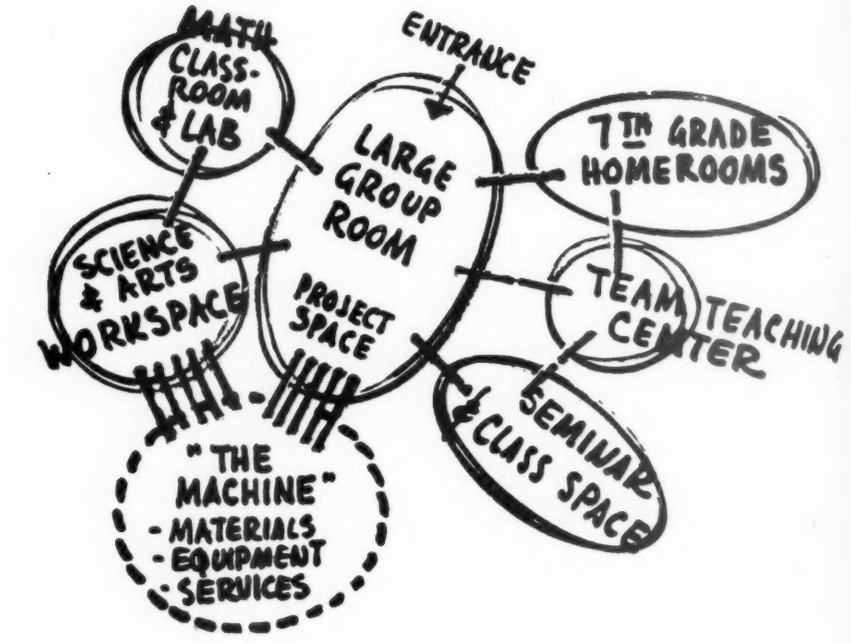
Homeroom area. Seventh graders will spend about 75% of their time here. Space allowances should be made for about 80 students in the typical house.

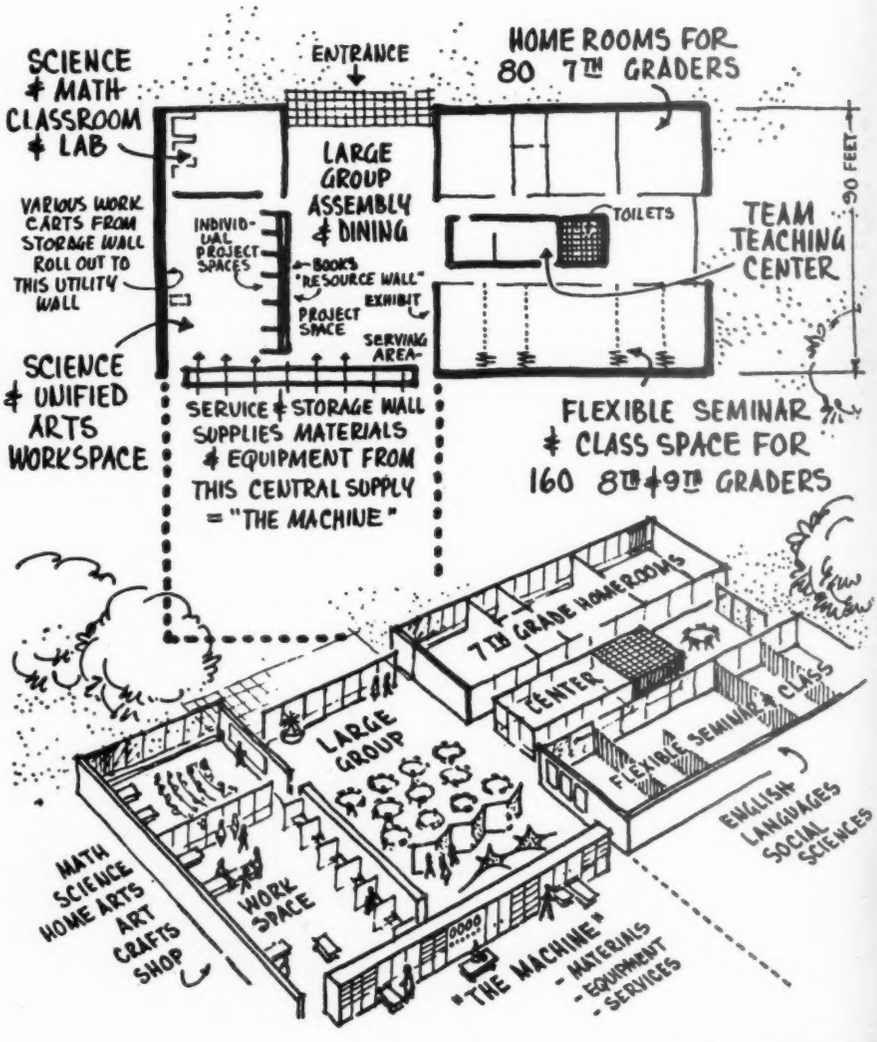
Seminar and classroom space. Eighth and ninth graders, in sections of various sizes and class hours, will need flexible learning areas.

Work space. Two areas are allotted for this purpose: a combined science and unified arts work space and a smaller, combined science and math classroom and laboratory. Emphasis here is on small group and individual study, experiment and project work.

Large group meeting room. Assembly, dining, lectures, films, group projects and social affairs are carried on here.

Team teaching center. A headquarters for teachers and a place for their equipment.




SCIENCE & MATH CLASSROOM & LAB
ENTRANCE
HOME ROOMS FOR 80 7TH GRADERS
LARGE GROUP ASSEMBLY & DINING
VARIOUS WORK CARTS FROM STORAGE WALL ROLL OUT TO THIS UTILITY WALL
INDIVIDUAL PROJECT SPACES
BOOKS "RESOURCE WALL"
EXHIBIT
PROJECT SPACE
SERVING AREA
TOILETS
TEAM TEACHING CENTER
90 FEET
SCIENCE & UNIFIED ARTS WORKSPACE
SERVICE & STORAGE WALL SUPPLIES MATERIALS & EQUIPMENT FROM THIS CENTRAL SUPPLY = "THE MACHINE"
FLEXIBLE SEMINAR & CLASS SPACE FOR 160 8TH & 9TH GRADERS
7TH GRADE HOMEROOMS
CENTER
LARGE GROUP
FLEXIBLE SEMINAR & CLASS
ENGLISH LANGUAGES SOCIAL SCIENCES
MATH SCIENCE HOME ARTS ART CRAFTS SHOP
WORK SPACE
"THE MACHINE" - MATERIALS - EQUIPMENT - SERVICES

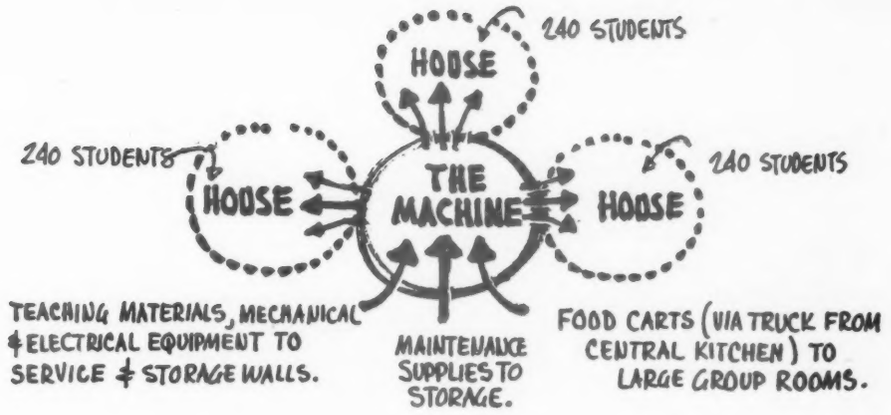
COMPONENT 2

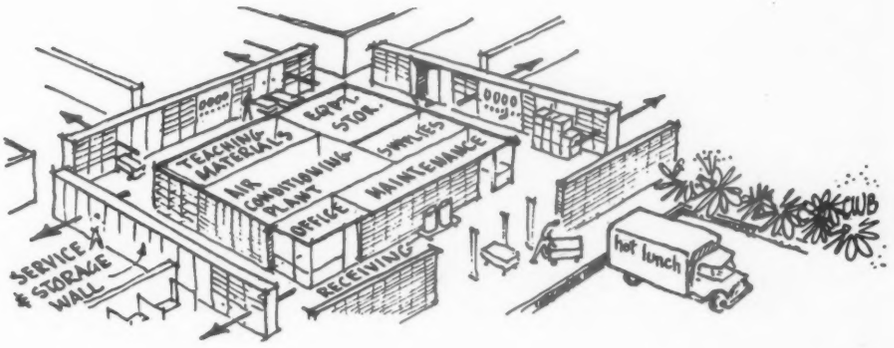
"The Machine"

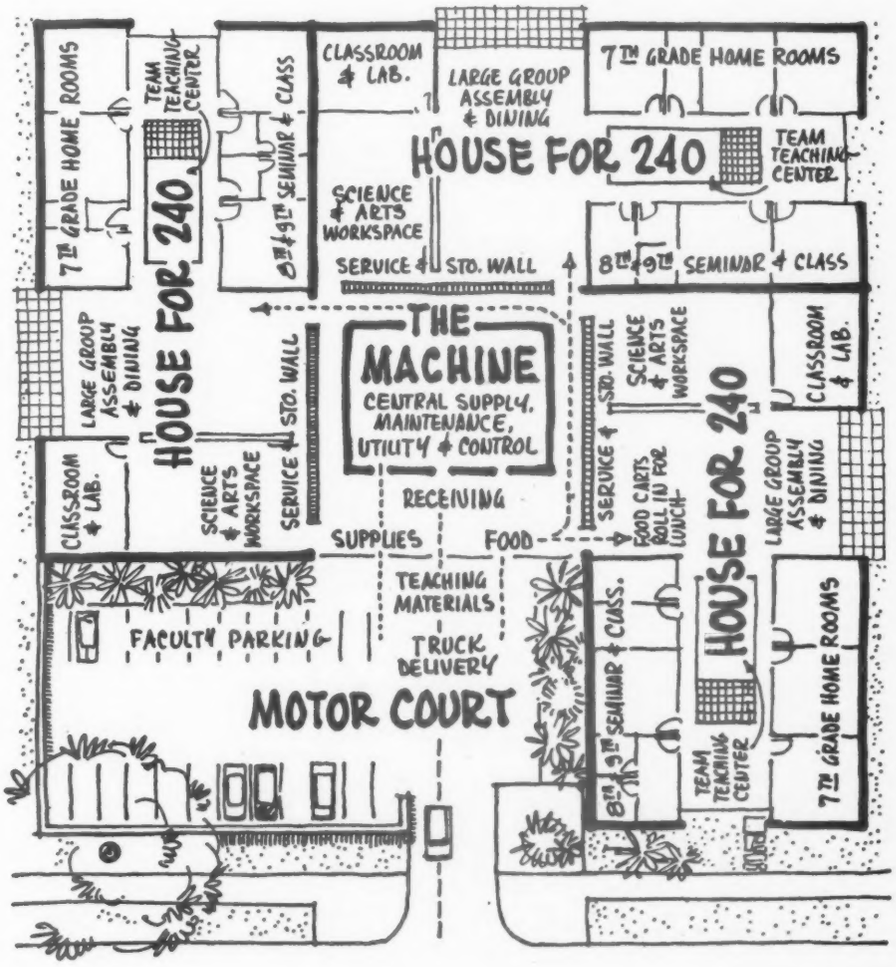
■ One side of each house is attached to "the machine," the school's storage, supply, maintenance and control center. The house is serviced through this common wall separating its work space and large group meeting areas from the machine. Teaching aids, electronic equipment and learning materials are passed over as needed. Food, prepared in central kitchens, is delivered to the machine and rolled on carts into the dining areas of each house at lunch time. Heating and cooling equipment is located in the machine. Centered here, too, might be the school's administrative offices.

With all the mechanical and electrical equipment and all service and supply functions concentrated in the central machine, the houses can devote all their space to the first job of any school—teaching youngsters.

please turn page







Three houses around the machine create a middle school for 720 students

Get expert advice at the planning stage with this unique service from Stromberg-Carlson

Next time you and your associates sit down to discuss sound systems for your existing schools or an installation for a new one—ask a Stromberg-Carlson Communications Consultant to sit in. He'll participate as a working member of your committee—ready with the expert information you need for fast, wise decisions. How do you reach him? By a local phone call. And naturally, there's no obligation. Call your Stromberg-Carlson School Communications Consultant today or write for free brochure, S-144, "The School with Sound Offers More of Everything." Write to:

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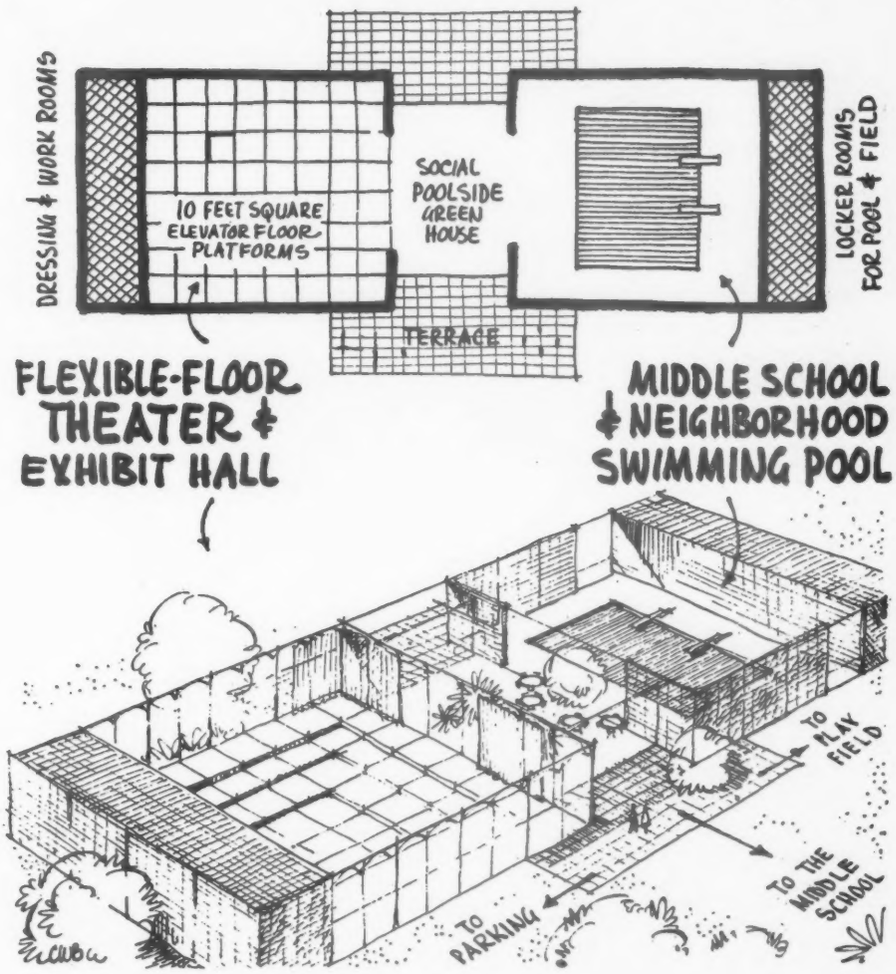
COMPONENT 3

"The Barn"

THE MIDDLE SCHOOL AND COMMUNITY CENTER

■ "The barn" is actually a large building divided in two by a central, covered social area. On one side is the theatre and exhibit hall with dressing rooms, work spaces and a flexible floor. On the other, are the swimming pool and locker rooms. Both school and neighborhood share these facilities. Space for community parking is provided near the barn for the convenience of the public. Students use the pool area lockers before going out to the playing fields next to the building.

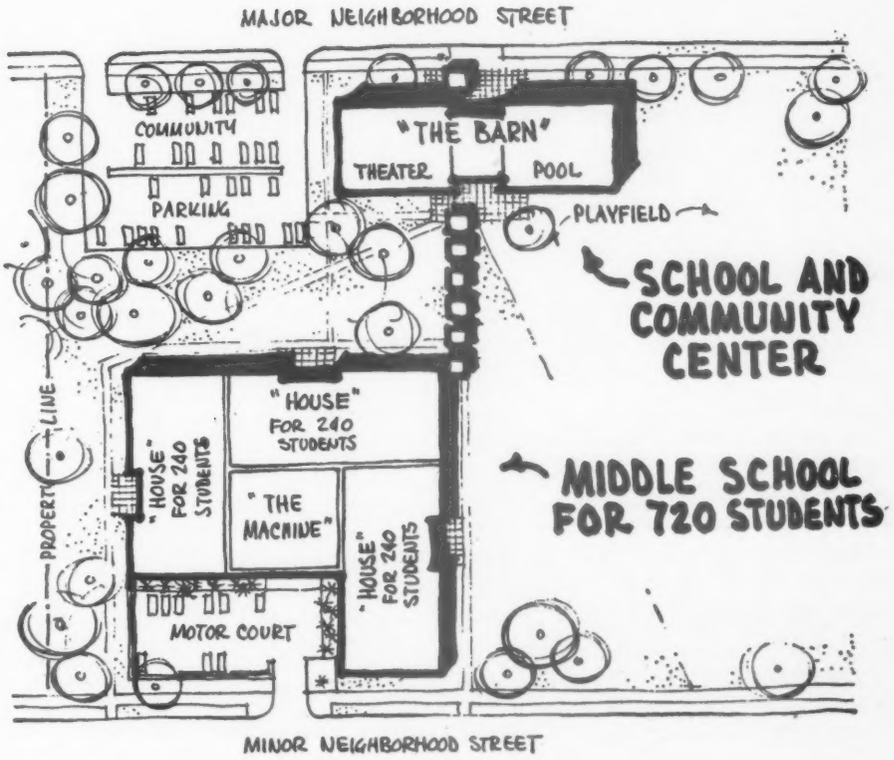

DRESSING & WORK ROOMS
10 FEET SQUARE ELEVATOR FLOOR PLATFORMS
SOCIAL POOLSIDE GREEN HOUSE
LOCKER ROOMS FOR POOL & FIELD
TERRACE
FLEXIBLE-FLOOR THEATER & EXHIBIT HALL
MIDDLE SCHOOL & NEIGHBORHOOD SWIMMING POOL
TO PLAY FIELD
TO THE MIDDLE SCHOOL
TO PARKING

THE COMPONENTS ASSEMBLED

Suburban Middle School

THIS EXAMPLE of a typical, available, flat suburban site presents one way a middle school can be laid out. The arrangement of its elements can vary with your needs and desires and the limitations imposed by the shape and location of your site. The houses, however, must surround the machine on three sides. In effect, they are treated as one large unit. In the plan given here, the barn faces a major street, making it easily accessible to residents who needn't pass through the rest of the school to reach it.

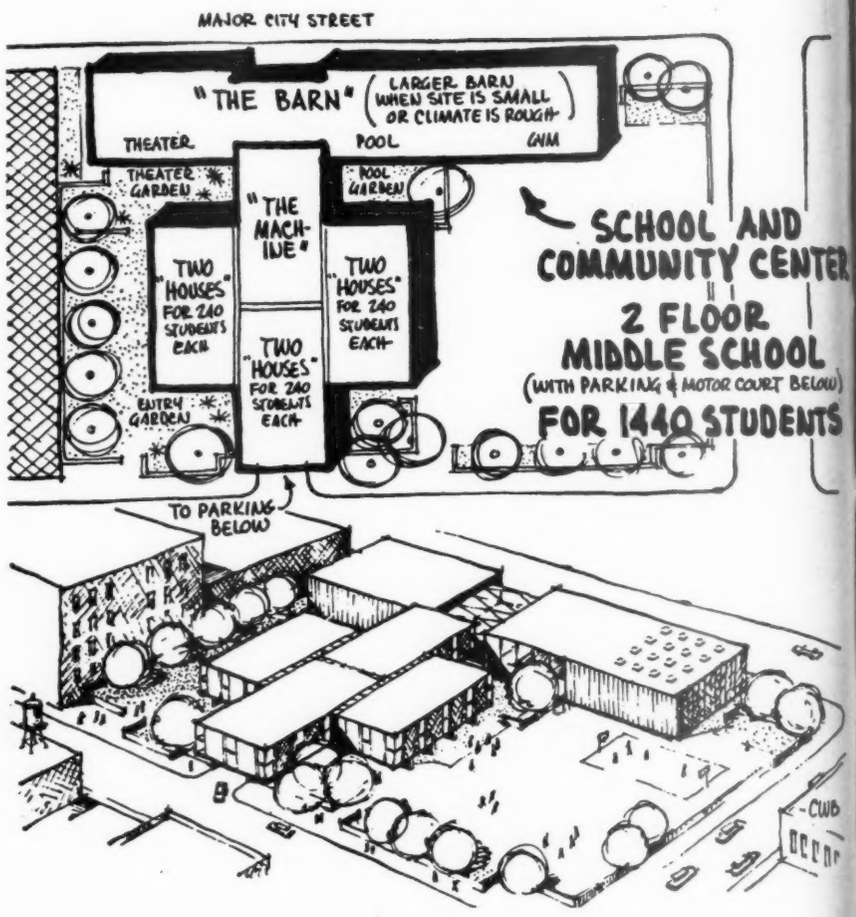
please turn to page 106



In the city, the components create a multi-floor

Urban Middle School

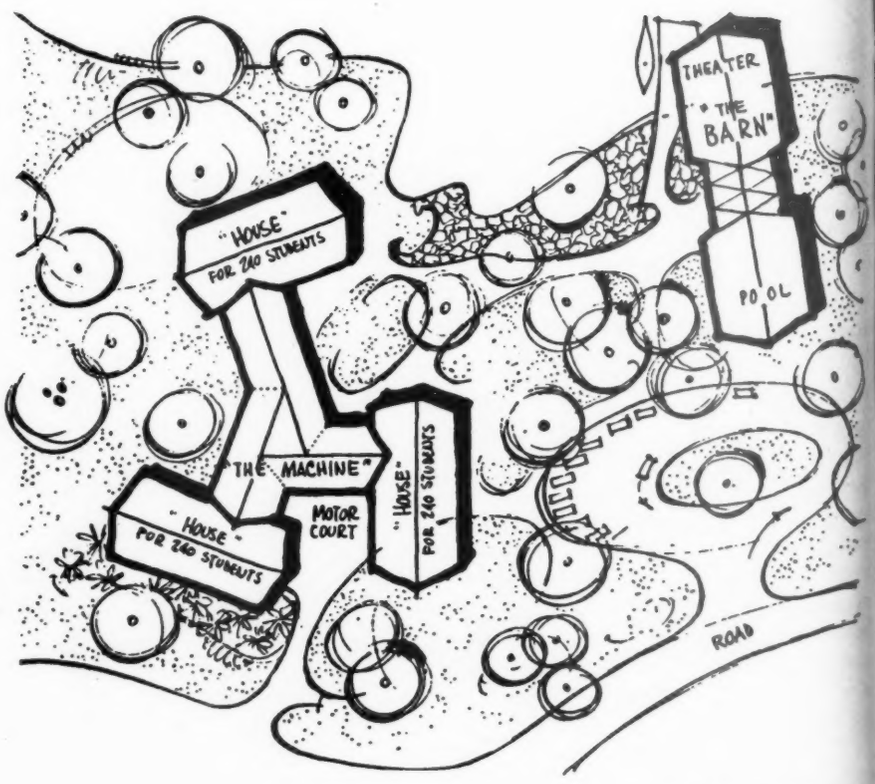
RESTRICTED BY A SMALL gridiron site in a crowded city area, the urban middle school expands upward rather than outward. Components still have the same relationship to each other, but the two house-machine units, built on separate levels, serve twice as many students. The larger barn is necessary for the same reason. In this case, it has been extended to include a gymnasium, since climate and site limitations restrict the size and number of outdoor playing fields. School and community parking space is underground.



And in the country, an

Exurban Middle School

UNHAMPERED BY A CRAMPED site, the middle school of the exurbs spreads over an ample, wooded, rolling area set beside a lake. More freedom is possible here in the design, size and location of the school's components to take advantage of natural features. But whatever the geography, the inter-relationship of the middle school's components remains the same. Staffed by teaching teams, these units can provide the flexible, adaptable schools you will require for tomorrow's changing educational needs.



How superintendents view the middle school

Does the middle school represent a workable proposal for tomorrow's junior high school? Here's what SM's panel of superintendents think.

■ ■ ■ The sketches shown on the preceding pages were prepared shortly following the White Plains conference. Copies of the plans were sent to the five participating superintendents. They were asked two questions: "Did the architect and the consultant come up with a school that would fit the needs of your community?" and "What changes would you want to make to improve this 'middle school'?" Here are their answers.

"While suburban sites will undoubtedly lend themselves to more flexible space control, the multi-floor urban middle school for crowded city areas contains many desirable features. The 1,440 capacity of this building would be a necessary minimum for the operation of an effective junior high school program in New York City.

"The emphasis on team teaching and the provision of central, large group assembly areas are important for our new concepts of instruction. . . . It is also important to recognize the necessity for providing facilities which can be used by the community as well as the school itself."

BERNARD DONOVAN

"The size and basic pattern given for the middle school are well suited to our area, though we'd have a real selling job to do in our community. The team teaching idea is very attractive. . . . I'm not sure the 'machine' will take care of all it's supposed to. It looks good on paper, but I wonder if it doesn't require teachers and students to travel too far for materials, equipment and supplies. . . . I would certainly like to see a simple basketball court included. The pools and playing fields are important, but we wouldn't want to be without some inside play space. . . . The names given to the middle school's components are attention-getters and would be valuable in public relations. But I think the 'barn' sounds a little old fashioned. I'd be more inclined to update it for our modern, suburban kids and call it the 'rumpus room!' "

FELIX FESTA

"This kind of free-swinging imagination puts other minds in motion. The non-restrictive design of the middle school provides for adaptation to unique local circumstances. What's more, it leaves the door open to evolution in the school program. Challenging in this proposal is the reliance it places on highly qualified teachers. Nowhere in the design do I find space for mediocre, tradition-oriented unimaginative personnel. On the contrary, it spells an environment in which teachers can grow, an atmosphere of stimulation, a plant which will engender creativity, experimentation, new ideas."

WILLIAM GRAGG

"A community the size of ours could put such an idea to good use within a few years. Buildings must fit the purpose and adapt to the educational philosophy of the school system. These plans could do so very effectively. Their assumptions are usable and appear to be practical for the team teaching approach. . . . The large group room, serving all the purposes prescribed for it, could entail many man-hours of shifting the equipment to be used. We have found this to be true in our use of a similar facility. . . . I like the team teaching center, the flexible-floor theatre, the exhibit hall and the philosophy of the 'machine.' Including a gym as well as a pool, as suggested for crowded city areas, would appeal to many people—especially high school coaches."

MALCOLM ROBERTSON

"The suggestion of three functional units for the conduct of the basically academic program of the school is sound. . . . They are properly developed around a center where a team or group of teachers can pool their talents.

"The second most significant suggestion is the school and community center aspect of this plan. It is possible that the school of the future will run on a two-sequence basis, with the latter part of the day and evening devoted to a common program for children and adults in the community. Therefore the suggestion that the 'barn' be somewhat separated and readily accessible to transportation and parking is excellent.

"I have some reservations about central kitchens. It might be much wiser to locate the cafeteria in the area of the barn. Then facilities would be readily available for feeding people both at noon and in the evening.

"Few school districts and faculties would be ready to use this building to its greatest efficiency when the school was opened. This is as it should be. Programs should grow into buildings."

PHILIP U. KOOPMAN

End

Soft drinks: liquid asset in your plans for

Increasing Student Use of School Cafeterias

The problem of participation in school cafeterias is not solved by any *one* ingredient. It takes a total program. But we respectfully suggest that one element in that program might well be bottled carbonated beverages.

Many administrators have found that when familiar soft drinks are available within school limits, youngsters are encouraged to stay on school property at lunchtime, and to use school facilities. There are several reasons:

Soft drinks (like relishes) accent the diet healthfully *and* visually, thus adding flavor and variety, zest and palatability to menus that may sometimes seem routine. In addition, soft drinks stimulate appetite and aid digestion.

WHOLESOME? Let's look. As you know, the body loses 2½ quarts of fluid each day. Bottled carbonated beverages help restore body fluid balance. They provide 100 calories of food energy per 8 ounces in easily assimilable form—a sound contribution to pupil alertness in the classroom. And because they are in liquid form, soft drinks pass quickly through the mouth, with virtually no involvement in oral conditions related to dental problems. (Recent dental research confirms this thinking.)

From an efficiency point-of-view, bottled carbonated beverages are easy to store, handle and serve economically. Their availability causes no conflict with the national school lunch program.

If the subject of soft drinks in schools comes before your Board, talk it over with your local bottler. He's a tax-paying businessman of the community, dealing in products which contribute to the local economy in the same way as other food products served on school premises. All he asks is an equitable hearing.

Let us send you more complete and thoroughly documented literature on the food, health and social values of bottled soft drinks.

American Bottlers of Carbonated Beverages

Washington 6, D. C.

National Association of the Bottled Soft Drink Industry—a non-profit association of manufacturers of bottled soft drinks, with members in every state. Its purpose: to promote better understanding of the industry and its products, and to improve production and distribution methods through education and research.

(Circle number 702 for more information)

A monthly review of ideas, new products and helpful hints

School shops lacking in proper dust control

Most districts do little to provide for control of dust from woodworking and metalworking machinery in school shops, a recent survey shows. School vocational directors and instructors relate these facts in questionnaires distributed by a leading manufacturer of dust and waste collectors. While all of the instructors queried said that modern dust control equipment is considered necessary, most indicated that actual installations are still infrequent. The collectors seem to fall into the "extra" category.

Educators explained in the study that aside from improving health standards, dust collectors reduced maintenance costs, reduced wear-and-tear on machinery, and eliminated safety hazards. One instructor pointed out that janitorial time in cleaning shops had been cut in half since dust collectors were installed. In maintaining a clean shop, instructors also found fire dangers minimized. Most important, dust was eliminated which previously aggravated students with hay fever, asthma and other allergies. In many cases this irritation had caused them to drop out of shop courses.

For more information please circle number 837 on the Reader Service Card.

Head bolt heaters end bus problem

By I. C. Candoli,

Business Manager, Portage, Mich.

There is nothing more disconcerting on a cold or wet winter morning than the sound of a school bus that won't start. For years, in our district, our bus maintenance people were up and on the job at 4 a.m. so that they could be sure that all buses were ready to go when the drivers arrived some three hours later.

We operate a fleet of 32 buses which travel 2,300 miles a day, bringing 4,300 students to and from school. We have a central garage which houses all of the buses and a shop and service area as well. The garage is not heated and has no doors, which means that inside temperature is not controlled at all.

Under these circumstances, the only way we could be sure all our buses would be ready each morning, was to come down early, get them all started and let them idle for about 30 minutes. The result was a waste of both time and fuel.

Now, happily, no such problems exist. Our solution is so simple and comparatively inexpensive, that we're surprised it isn't used everywhere. But it isn't.

We have installed, in our garage, head bolt heaters for each of our buses. A time clock automatically starts the flow of electricity to the heaters.

The result of this system has been faster starting buses and an end to 4 a.m. sessions at the garage.

The biggest single cost item was the electrical service to the garage. Even so, the cost of the wiring inside the garage itself and of the heaters, came to something less than $1500.

Cost of electrical service and heaters will be more than offset, within two years, by the savings in labor, gas and service. And, most important of all, we have eliminated forever that horrible whining sound of an engine that won't start.

Extended day improves district's total program

By scheduling a 10-period day in their local high school, Fort Osage schoolmen say they have improved their district's educational program. The new system has reduced overcrowding, cut transportation costs and improved public relations. Even more important, it has helped administrators make better use of their district's

Bells, banks and buses

The tintinnabulation of the bells, bells, bells is driving the citizens of **Austin, Minn.,** to distraction. Seems the bells in the new Southgate school —activated by a mysterious radio wave—have been going off at all hours of the day and night for a year now. Electricians called in to solve the mystery have been unable to track down whatever is causing the bells to ring out at such hours as 4:00 in the morning. The kids don't seem to mind the irregular bells, but the adults are going somewhat daffy.

Speaking of adults, some of them might take a cue from their thrifty offspring. The American Bankers Association announced recently in New York that school children had a record $234,620,000 on deposit at member banks at the close of the 1959-60 school year. The 795 banks paid almost $4 million interest on the accounts last year.

Maybe some of that money could be used for a pension for Lloyd White of **Toronto, Canada.** The 67-year-old former teacher has asked the workmen's compensation board to award him $230,000 because of foot trouble that has caused him to use crutches. The foot trouble, he says, is the result of 28 years as a teacher. As White explains it, in the course of his duties he had to walk 18,000 miles, which is about as far as any one pair of legs can be expected to go.

Of course, children of Air Force personnel in **Naha, Okinawa,** don't have to walk, but to hear some of them tell it, they might just as well. Col. Joe E. Briley, commander of the Kadena Air Base, has decreed that boys and girls may no longer ride to school on co-educational buses. From now on there will be one bus for boys and one for girls—a situation which, we're sure, is going to make bus riding far less attractive.

sizeable investment in specialized rooms and equipment.

Under the long day schedule, senior high school starts at 7 a.m. When the junior high students arrive three periods later, at 9:42, the two groups share classrooms for four periods. Senior high ends at 1:30 p.m. while junior high continues for three periods more, until 4:12. For the most part, each group has its own teachers. The few instructors who conduct both junior and senior high school classes are scheduled in such a way that they are present for a seven-period day.

Seventh and eighth graders formerly attended classes in overcrowded elementary buildings. Now, in the senior high school, they are able to make use of shops, laboratories and gym facilities unavailable to them before. By establishing staggered schedules, the district has been able to transport more of them with fewer buses—at considerably less cost. The 12 buses operating in the district now do the same amount of work formerly performed by 18.

Public interest in what the schools are doing has been stimulated, too, by the extended day schedule. Junior high youngsters, who are extremely interested in all student affairs, are too young to drive automobiles. So they bring their parents with them to every extracurricular event in the high school building. As a result, more of Fort Osage's residents have come to know —and see—what is being done in their schools.

Superintendent Aubrey O. Pittenger is aware of the drawbacks involved. For one thing, the more immature junior high youngsters must mingle too intimately with their older senior high classmates. Ideally, he would like to build a separate junior high wing near the high school. Then both groups could still make extensive use of the high school's expensive special rooms and equipment. But even if separate facilities could be built, he would still prefer the longer school day—with the advantages it has brought to his own school district.

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(Circle number 706 for more information)

On-the-bus training for primary children

Children from kindergarten through second grade in Randolph Central School, Randolph, N.Y., learn good safety habits by running through drills on a real bus in an off-the-highway location.

Before school begins each fall, they practice safety routines in the elementary school parking lot where two school station wagons and a bus make up a mock highway traffic area.

Says Gail N. Chapman, elementary principal, "We believe that actual participation in loading and unloading procedures does far more than discussions of safety rules in the classroom."

The primary grades are not the only ones involved in the program. Copies of six important safety rules are distributed to all grades so that elementary teachers can work out safety projects and actual demonstrations of what the rules mean.

Playgrounds a hazard we can't do without

Thirty percent of all childhood accidents—the leading cause of death in children from nine to 14 years old—take place in public places such as school and municipal playgrounds. Yet, say two Pennsylvania schoolmen, the accident rate would be shockingly higher if such equipment were removed.

Dr. N. Dean Evans, assistant superintendent, Delaware County Schools, Media, Pa., and Robert Daiutolo, elementary principal, Lansdowne-Aldan Joint School System, Lansdowne, Pa., recently conducted an exhaustive state-by-state survey of accidents involving apparatus on elementary

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This is the Toro Park Special: 30 inches of rugged 8-inch diameter reel with 6 blades double-riveted to malleable spiders . . . a 5¼ hp engine . . . ground-hugging 3.00 x 7 pneumatic tires with large caster-wheels in front . . . individual traction and reel clutches with full differential on traction wheels —and optional equipment that includes reverse, electric starting, riding sulky, and grass catcher.

See the Park Special at your nearby Toro distributor's. He's listed in the Yellow Pages under "Lawn Mowers."

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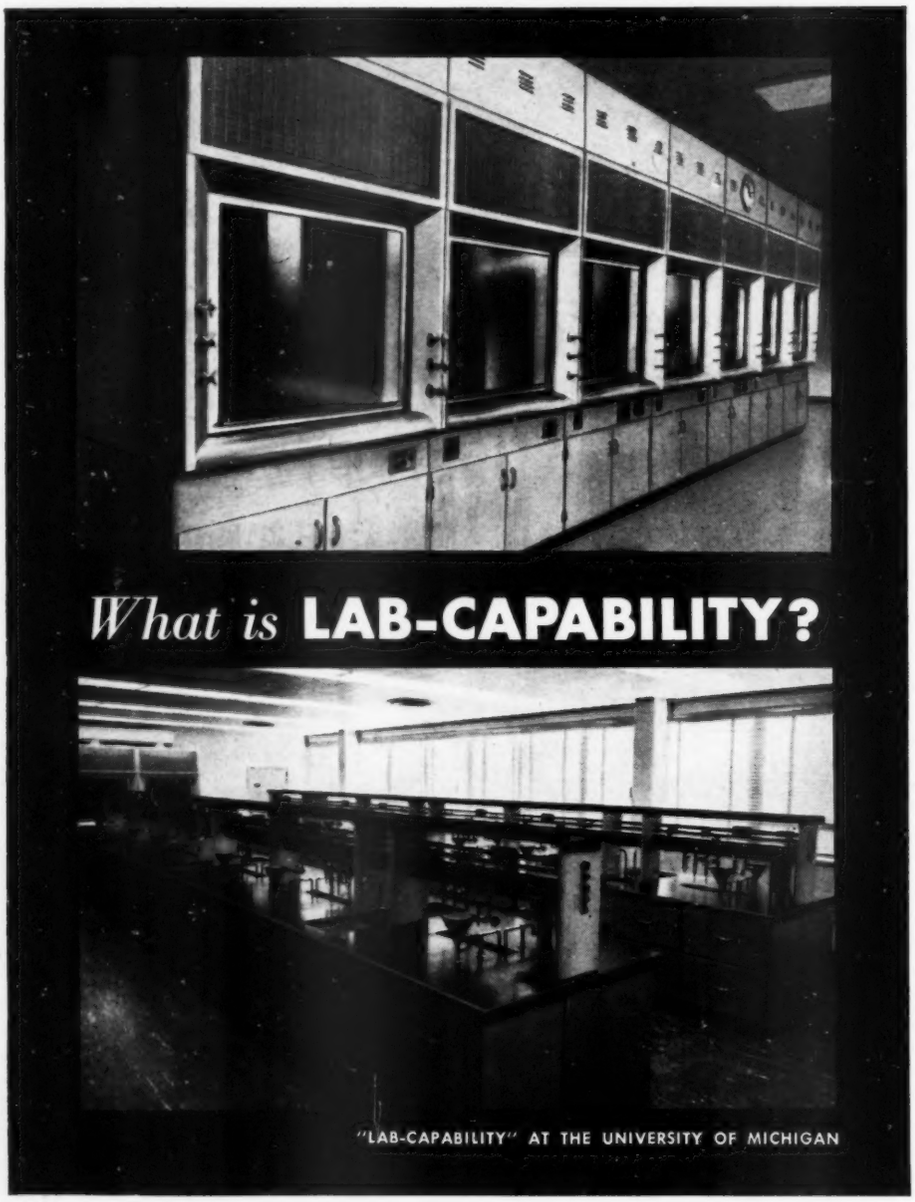

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school playgrounds. In every area where apparatus was removed, they found, the accident rate increased substantially. In Texas, for example, accidents during unorganized play rose by 50% over those reported on standard playground equipment. The absence of apparatus prompted children to run more, fall and collide more often and, in general, engage in more violent horseplay.

The schoolmen found, too, that playground accidents are increasing. Denver, Col., had 23% more such mishaps last year than in the year before. Many other cities and states reported similar upward trends.

When it comes to equipment, slides account for the most serious injuries, say the investigators, with teeter-totters, see-saws, swings and other climbing and swinging apparatus close behind. The injuries—most of them due to falls—range from concussions (56% of all injuries involve the head) and fractures to cuts, contusions and internal damage.

School heating costs cut by fuel-saving additives

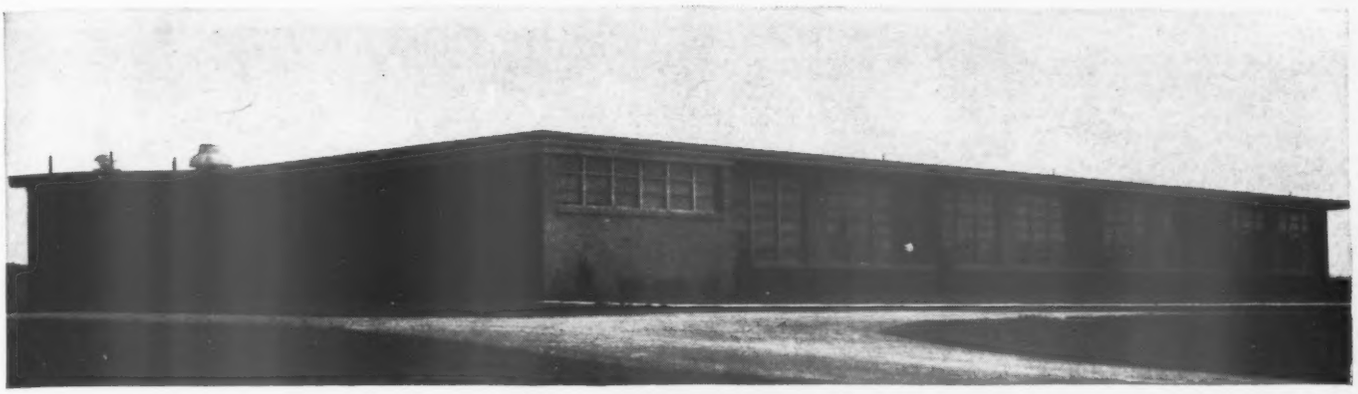
Heating costs are taking too much of the average school's budget. According to SCHOOL MANAGEMENT's Cost of Education Index, one out of four schools spends almost as much for fuel as the average school spends for teaching materials.

Faced with the problem of supplying proper heating within definite budget limitations, Bloom Township High School in Chicago Heights, Ill., has turned to fuel oil additives. After three years of experience with the alkaline-catalyst additives, Supervisor of Buildings and Grounds Elza Snow says they have paid for themselves in greater fuel economy. "We've found a way to use the least expensive fuel and get results, while maintaining equipment in good condition," Snow relates.

Using one quart of the additive with every 1,000 gallons of fuel allows oil to burn thoroughly and eliminates line clogging, carbonizing and boiler scale. Heavily refined modern fuel oil, when burned without additives, leaves "gunk" which burns insufficiently and clogs fuel lines, Snow claims. This highly combustible material is kept in suspension by the additives.

"Cleaning and heating times have also been shortened," says Snow. "Previously burners had to be scrubbed once a week with wire brushes. Now a simple wiping with a cloth keeps them clean."

For more information on the use of this additive, circle number 890 on the Reader Service Card.



Locust Grove Elementary School, Windsor Township, Pennsylvania.

Chromalox Electric Unit Ventilator automatically draws fresh outside air for cold weather ventilation or mild weather natural cooling. Convected heat from flanking Chromalox Baseboard Heaters breaks up downdrafts from windows.

Harvey J. Becker, Principal. ". . . electric heat is ideal for today's schools. We are very pleased."

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Completed in 1958, this six-room, 180-student elementary school was the first in Pennsylvania to be heated entirely by electricity. Now in its third winter, heating costs are comparable to other fuels available and well *below* original estimates.

Comfort is ideal. And there's no soot, leaky pipes, water hammer, fuel or combustion odors.

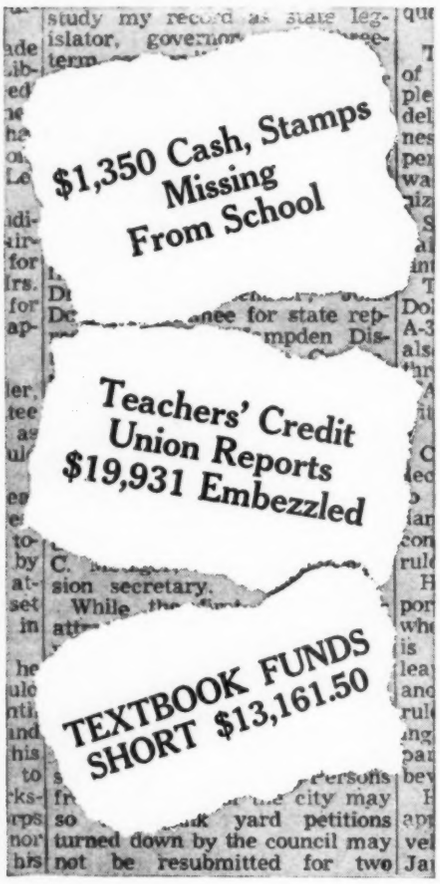
Eight more classrooms, plus an all-purpose room, library, music room and educational materials room are now under construction. Initial costs of this addition have been reduced considerably, since boiler room expansion, piping and pipe trenches are all eliminated. With electric heating, you need only extend the wiring, and install electric units as classrooms are completed.

Aren't these good reasons why *your* school should be heated by Chromalox? Write us for more facts and figures on Chromalox Electric Heat for this and other schools.

Architect: Buchart Associates, York, Pa.
Power Company: Metropolitan Edison Company
Electric Heating Contractor: John Z. Barton 91070

EDWIN L. WIEGAND COMPANY
7500 Thomas Boulevard • Pittsburgh 8, Pa. • CHurchill 2-6400
CHROMALOX ELECTRIC HEAT

(Circle number 770 for more information)



It's shocking, but these actual cases show that dishonesty does occur—*even in schools!* That's why it's good business sense to bond *every person* — including students—trusted with school money and property.

Ætna Casualty's special *"School System Blanket Bonds"* are the practical, inexpensive way to protect school systems of all sizes. The cost is moderate, and it's a good investment in financial safety . . . one you should investigate fully.

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Teaching teams

continued from page 54

Our flexible room dividers are 40 decibel walls, which most engineers would consider soundproof. Each room space is built on a 26- by 32-foot module. The classrooms are built around interior courts and are surrounded by hallways so there would always be a way to enter and leave each room without disturbing the occupants of other rooms.

Q. In describing your team members you've spoken only of teachers. Are others involved, too? Do you have any non-professionals such as lab assistants, for example?

ANDREE: Only as citizens, not as team members. Through the Berg Science Seminar Plan we have been able to utilize community resources to help our able science students. Each student is assigned a scientist from our area with whom he can consult from his sophomore year on. About 200 members of the American Chemical Society alone are represented among our district's residents and we can draw upon them as needed.

We use local talent in a similar way to teach foreign languages. At present we have two language laboratories conducted by teacher teams. When we need taped materials, we turn to community residents with foreign backgrounds to make our tapes for us. In this way we can create materials for Oriental languages, Russian, French and any number of modern tongues. In a sense this, too, is a team approach since the student works with both a foreign-born citizen and his teacher in language study hours.

Q. But you don't make use of non-certified personnel to reduce the burdens imposed by the teacher shortage?

ANDREE: No, we don't. I would hope that the teachers would be smart enough to reduce some of their tiring, repetitive experiences themselves. I think they tend to drive themselves too much anyway with too many assignments rather than too few. This is why the team teaching approach can be of great help. If you can develop a proper peer relationship in the classroom, you will automatically reduce the tremendous amount of paper work that teachers must wade through. **End**

For practical help on

How to prepare a school budget

You will want extra copies of the January, 1961 SCHOOL MANAGEMENT magazine containing the *complete* new 1960-61 Cost of Education Index Study.

The January issue of SCHOOL MANAGEMENT will tell you what the Average, Top Quarter and Top Ten percent of the nation's school districts are spending for:

Administration
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After school is "play" time for a Conn organ too

Modern-minded educators realize what a great contribution a CONN Organ can make during school hours. But when classes are through, CONN music is just as much in demand...at dances, PTA meetings, gatherings of parents and guests at homecomings, and a host of other community affairs. Those who see and hear the CONN are always impressed by its fine organ craftsmanship and rich, pure tones. There is no "tone borrowing" with a CONN. Each note has a tone generator of its own. And CONN's versatility means accurate rendering of all kinds of popular and classical music. If you have any question about CONN quality, talk to your bandmaster. He'll tell you CONN has been the leader in band and orchestra instruments for 85 years...a background no other organ manufacturer can match. There is a CONN Organ for every budget, room size and range of musical expression needed. Don't buy any organ until you try this one...**CONN ORGAN**

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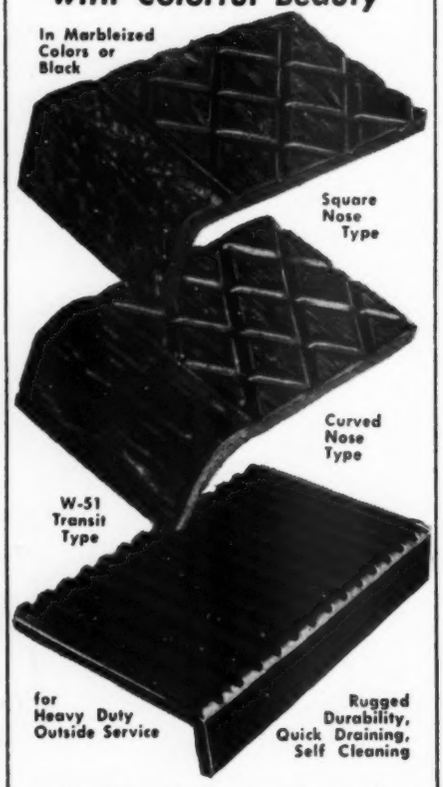
Molded Rubber STEP TREADS

Give Lasting SAFETY with Colorful Beauty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All-black treads for extra heavy duty service are 1/4" thick . . . Marbleized treads in green, blue, terra-cotta, brown, gray are 3/16" thick. Color is permanent regardless of wear. Can be matched with riser and landing coverings for decoration. Apply permanently with Melastic water-proof bonding cement to wood, concrete, metal, tile steps. Treads are supplied trimmed to fit your steps—no cutting or waste.

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Please send catalog and prices of Step Treads and other SAFETY products.

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(Circle number 743 for more information)

Tape recordings

continued from page 60

considerable number of tapes that have been purchased since it was installed. "We have added about $300 to $400 worth of tapes since then," he says.

"We weren't aware, at first, of how many tapes would be required for our program, both in the lab and in the special uses to which we have put our recorders elsewhere. But you must have enough tapes to get you through one whole semester using only one track on each. The next half-year, you can reverse the tapes and use the other track. You can't use both tracks simultaneously. If you do, some youngster will return from an absence and want the tape on which you may have recorded tomorrow's lesson."

Tape recorders cost about $200 each. Taylorville's expenditures for the machines are estimated by De Weese to be about $4,500. This figure includes those assigned to all of the school buildings in the district.

"Part of our costs were defrayed by the NDEA and a grant from the Ford Foundation to finance our teacher utilization study. But we had tape recorders in all of Taylorville's schools before we ever received financial help of any kind," De Weese reports.

As for the future, De Weese feels that further uses for these teaching devices will depend wholly upon the needs of the classroom teachers. "We didn't decide to go into this exploratory program on the hunch that tape recorders and language labs were good things to have. The decision was made on the basis of demonstrated needs of our teachers. And they are precisely the ones who can tell us where we can move next with this equipment. After all, they're the ones who will use it.

"Almost daily someone comes up with some new idea or suggestion. Here's something we've tried recently at parent-teacher conferences: Before meeting with a parent, the teacher taped some samples of the work the student was doing. Then, during the conference, she played the tape back for the parent to hear. It was a surprisingly effective way of demonstrating just how well the child was performing in class." **End**

Are his needs hobbling your school program?

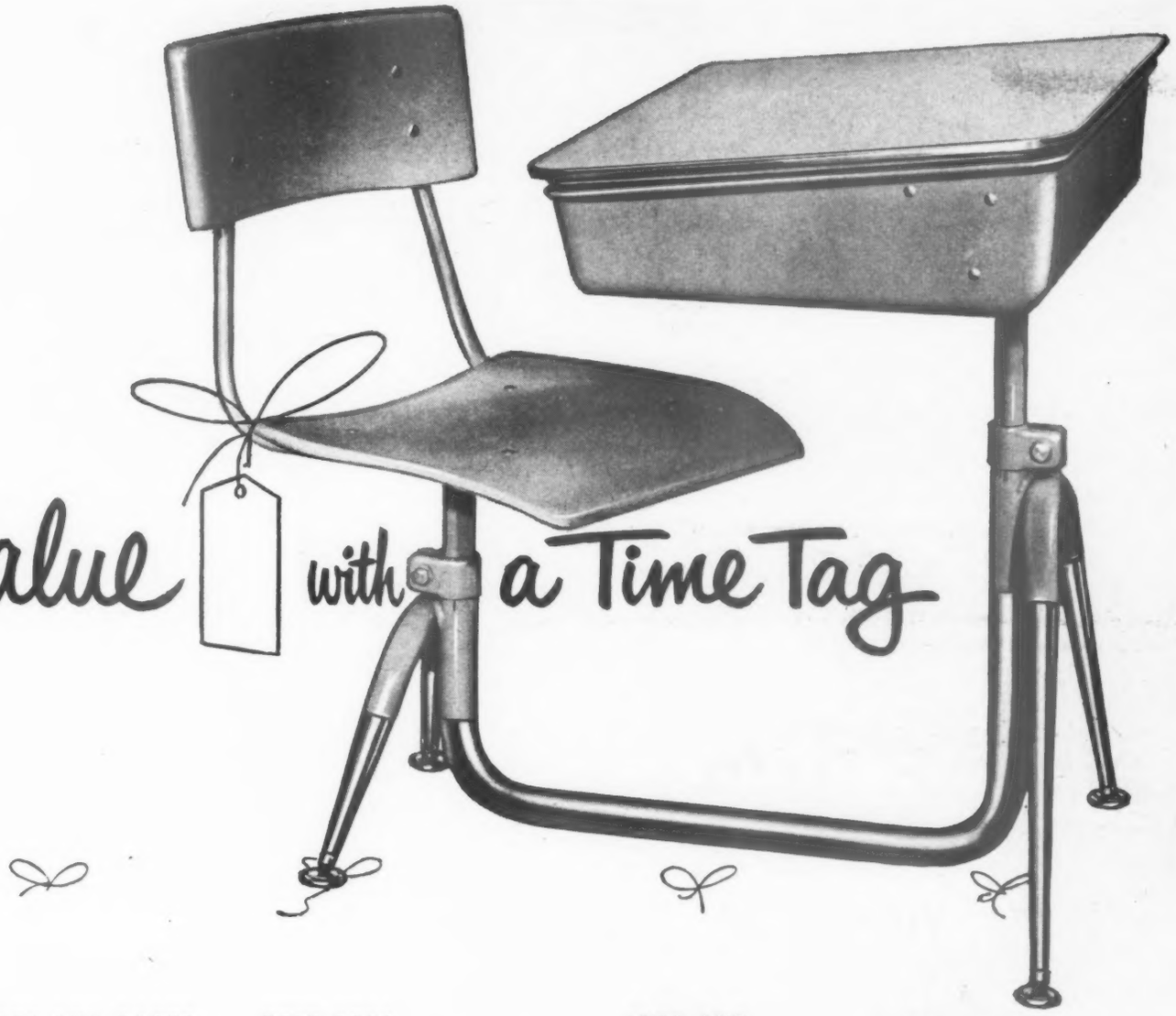
Quite possibly. Because he's not alone. 3 out of every 10 children need visual care. They're falling behind, slowing the class, because their handicaps go undetected.

Yet the solution is so easy. The N. Y. School Vision Tester is professionally approved for reliable measurement of visual acuity and muscle balance. It's portable, compact, for on-the-spot tests. Takes about a minute, even with pre-readers. Here's the fastest, surest way to make sure your pupils' vision is adequate for your educational load.

Try it for 30 days, free. Write for free booklet and details on movie, "Report Card on Vision." Bausch & Lomb Incorporated, 87111 Lomb Park, Rochester 2, New York.

New York School Vision Tester

(Circle number 705 for more information)



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It's built for years of vigorous classroom use.

Polaris

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Features include adjustable lift-lid desk top, swivel seat action, height adjustment for both seat and desk, choice of modern metal color finishes.

Value in classroom seating is made up of many things. Adaptability to classroom needs, seating comfort, ease of maintenance are typical and the Polaris has them all. But in addition the Polaris carries a "time tag" in value . . . the result of Arlington design to give you years and years of dependable service with a very minimum of maintenance. When considering your school seating investment, here's a value that's well worth remembering. For complete information now, just write for the Arlington Catalog.

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. . . you'll be investigating classroom television for your school system. When you're ready we'll be happy to offer our complete technical consulting facilities.

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University of Omaha
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The typewriter lowers into a specially protected cradle where it is out of the way and out of sight. The Tuck-A-Way desk top is made of ⅝" indestructible Fiberesin solid plastic in tan birch finish, all steel understructure is finished in light brown baked enamel.

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School kitchen

continued from page 57

cided. Other questions include: whether there is a separate faculty serving line or a separate faculty dining room; whether the snack bar is in a separate part of the building or is included in the scramble; what will be served from the snack bar; whether the equipment in the scramble should be stationary or portable. In some cases, the hot food is served directly from the kitchen and all others counters are portable so that they may be moved into the walls and the area opened up for a study hall.

Nothing has been said here about the kind of equipment to be used as this varies with each individual school cafeteria. Decisions must be made on such matters as: Gas or electricity? Plastic or china? Silver or stainless steel? Peg type or rack type dish machines? Direct steam or gas or electric fired kettles? Size of dining room? Single, staggered or multiple feeding periods? Color? Walls? Floors? Ceilings? Ventilation? Stainless steel or galvanized iron? All of these and many other points are involved in drawing up finished plans.

Central kitchens

The designing of a central kitchen is far more complicated. There are so many factors involved that every design is completely different from every other. For example, how many receiving schools are involved? What are the distances from the central kitchens? Will the central kitchen be in a building of its own or will it be part of a school? Will the foods served be all plate lunches or will they be a la carte? How much of a choice of food will there be? Until these and many other questions are answered, we can't even begin to plan. Therefore, it would serve no purpose to include any typical central kitchens in this article as no central kitchen is typical.

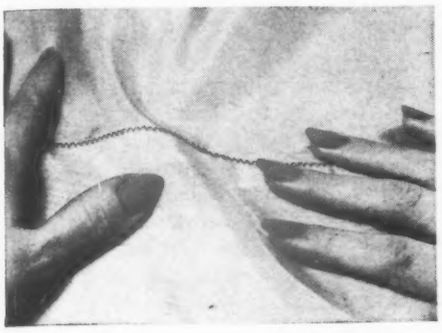
But in the design of any kitchen, one factor is more important than any other—the absolute necessity for the architect, the contractors, the school administrators, the cafeteria supervisors, the successful bidder and the consultant to *work together*. If this is not done, even the most costly installation will prove to be a failure. **End**

9 reasons why a sewing course is incomplete without a *SLANT-O-MATIC* machine

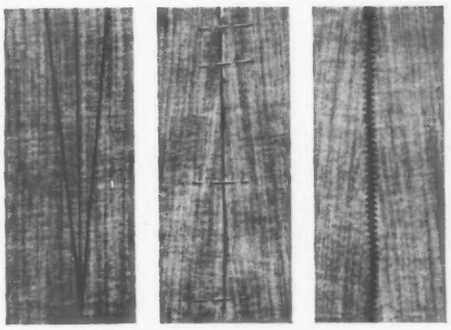
BUTTONHOLES

OVERCASTING

APPLYING ELASTIC

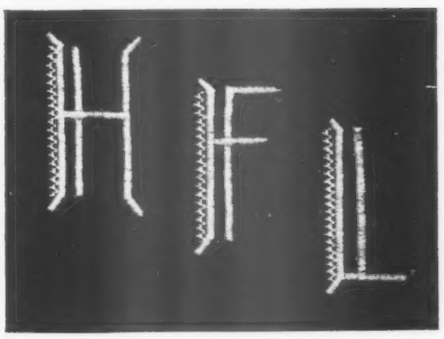


LINGERIE SEAMS

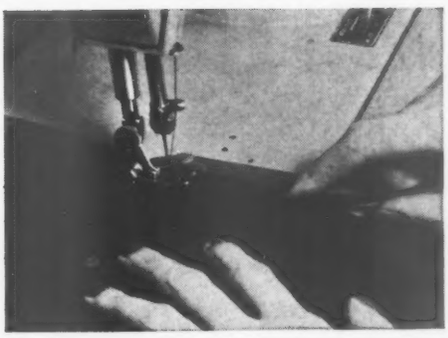


INTERFACING DART

SEWING ON BUTTONS

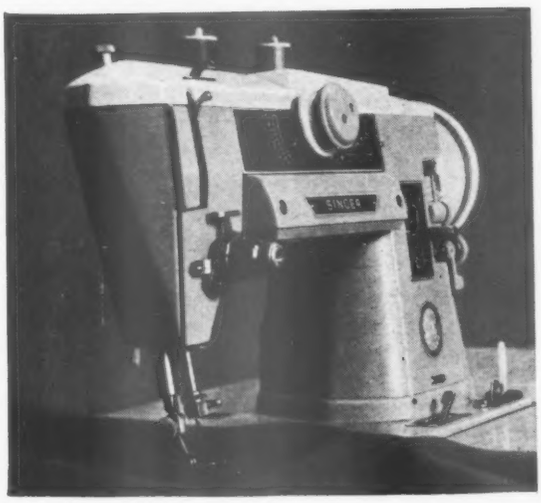


DECORATIVE WORK



ATTACHING TAPE TO HEM

BLIND STITCHED HEMS



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(Circle number 758 for more information)

Yours for the asking

continued from page 12

information in schools about the laboratory apparatus and instrument industry.

For a free copy of this directory, circle number 867 on the Reader Service Card.

Multi-purpose chalk boards. New classroom applications of chalk boards are described in a brochure published by Johns-Manville. Examples are given of how chalk boards can be used for free-standing partitions, easel-reversible units, movable panels—and convertible units that combine table surface, tack boards and chalk boards in one compact assembly. Data is presented on the physical properties of the firm's Colorlith and on suggested architectural specifications for its use. Detail drawings picture chalkboard installations with metal trim, wood trim and without trim. Typical applications—such as partitions, door and wall surfacing, curtain-panels and double and triple-purpose classroom units—are illustrated, too.

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For a free copy of this catalog, circle number 860 on the Reader Service Card.

Durable wood finishes. Urethane coatings for wood are described in a 4-page technical bulletin issued by B. B. Chemical Company. Two resin systems are offered as clear coatings for producing highly durable finishes that enhance the beauty and character of wood. Also described are the characteristics which make these finishes valuable as protective maintenance coatings for wood surfaces. Techniques for using the finishes are also included.

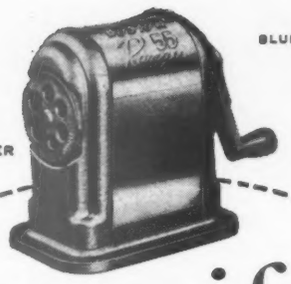
For a free copy of this bulletin, circle number 895 on the Reader Service Card.

Trucks for food handling. An 8-page, illustrated booklet devoted to food handling trucks and how they can be used is available from Jarvis & Jarvis, Inc. The booklet reviews the time-and labor-saving features of specialized equipment for the various operations involved in school lunch food handling. Separate sections are devoted to receiving and storage, preparation and service, and clean-up. A variety of truck models for different purposes are illustrated, accompanied by sketches which detail their uses in the operation of school lunch programs.

For a free copy of this booklet, circle number 901 on the Reader Service Card.

School seating. A 17-page catalog describing institutional seating is available from Hampden Specialty Products Corp. The catalog fully illustrates each item in its seating lines and includes complete size specifications, color availabilities, construction features, weight and packing information. Charts are provided which describe color combinations and a guide border on the catalog illustrates the available colors.

For a free copy of the catalog, circle number 894 on the Reader Service Card.



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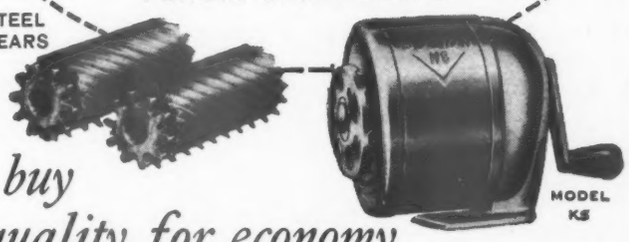

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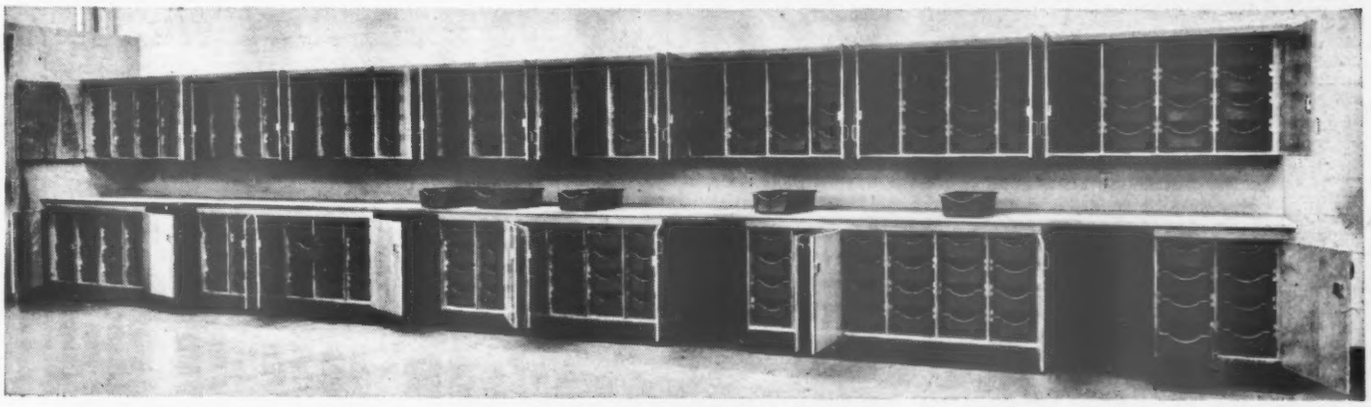

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#620	20x11⅛x4½	#645	16x11x4
#630	16x12x4	#650	19½x13⅜x4½

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PRESS RELEASES

News from the business firms serving your schools

Walkway covers

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■ ■ ■

All-purpose demonstrator

A mobile demonstrator, display and visual projection unit, designed for use in all classrooms and for all subjects, has been introduced by Desks of America, Inc. The self-contained unit makes it possible for even the smallest classroom to double as a laboratory, science or special effects room without the cost of special plumbing or electrical work. The unit consists of three movable demonstration panels and a cabinet which can be used for storing display materials and accessories necessary for science classes. A translucent screen can also be elevated for visual presentations. Rear projection is possible through an arrangement of mirrors and prisms which focus the picture on the screen. For sound films, an interior mounted loud speaker can be ordered with the unit. The speaker can also be used with a tape recorder.

For more information, circle number 854 on the Reader Service Card.

■ ■ ■

Low cost language lab

A portable language lab system designed for use with power sources already installed in schools is available from Switchcraft, Inc. The unit operates from a control center which relays audio material through headphone jacks to student positions.

The headphones feature individual volume controls and can be monitored by microphone. A 15-volt power source is offered with the system, if desired. The power unit will handle up to 20 student-amplifiers. An optional junction box couples amplifier lines with two, four or six headphones for use as auxiliary units.

For more information, circle number 885 on the Reader Service Card.

■ ■ ■

Improved heating system

A high velocity air induction system for heating and ventilating schools has been developed by Carrier Air Conditioning Co. The method is designed to reduce school heating costs. The system forces warm air throughout conducting ventilators which heat the school. Each vent outlet contains a coil for reheating room air induced through it. The reheat coil acts like a baseboard convector at night and during weekends, eliminating the need to send warm air into the rooms from

C. A. Coker, Business Manager,
Niles Township High School.

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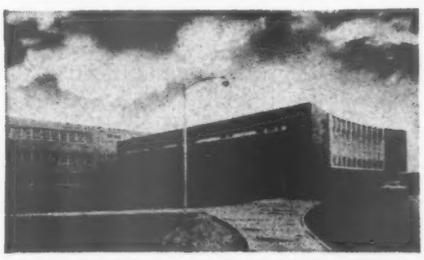

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Burroughs automation equipment can help your school or district to new levels of accounting productivity and capacity. For details, see our new film "This Business of Education." Call our nearby branch. Or write Burroughs Corporation, Detroit 32, Michigan.

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(Circle number 710 for more information)

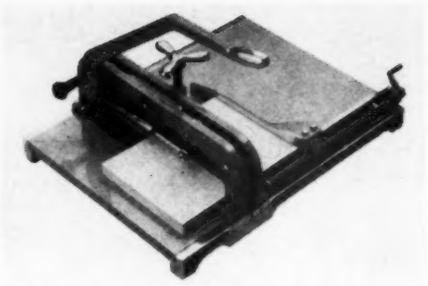
the central system during these periods. A water chiller can be installed in the system, along with an outside cooling tower, for cool-air ventilation.

For more information, circle number 881 on the Reader Service Card.

■ ■ ■

Paper cutters

Two paper cutters designed for tabletop use are available from the Douglas Homs Co. The cutting boards feature an adjustable "micromove" back guide coupled with a ¼-inch graduated side guide and an automatic safety device. The back guide can be removed for cutting extra long sheets. The cutter feet are drilled and tapped for permanent mounting and are fitted with rubber pads. Two adjusting wrenches, two replacement cutting sticks and four attaching bolts are furnished with the cutters.



For more information, circle number 886 on the Reader Service Card.

■ ■ ■

Snow clearing chemicals

Chemical pellets that melt ice and snow immediately, even in sub-zero weather, have been developed by the Revere Chemical Corp. The pellets are available in a complete range of container sizes, ranging from 150-pound drums to 10-pound lots.

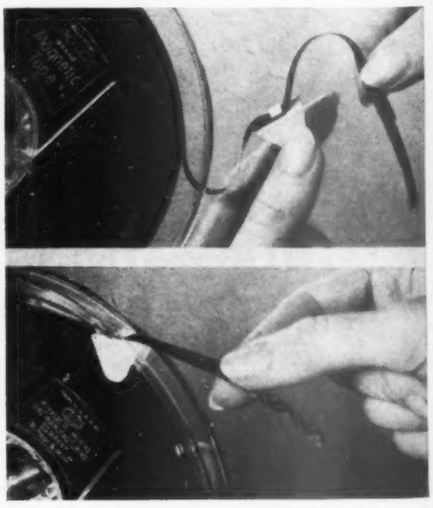
Harmless to grass, shrubs and other vegetation, they will not corrode concrete, asphalt or tires. The pellets generate extreme heat immediately upon contact with moisture, and are said to work 30 times faster than salt.

For more information, circle number 835 on the Reader Service Card.

■ ■ ■

End-of-reel tape clip

A thimble-sized plastic clip that slips smoothly between the flanges of reels to hold loose ends of magnetic tape securely in place, has been developed by Minnesota Mining and Mfg. Co. Molded of polystyrene plastic, the triangular-shaped clip is sturdy and flexible. Designed as a simple and quick means of keeping tape on either partial or full reels from tangling or unwinding, the clip fits standard quarter-inch recording tape on any size reels.



For more information, circle number 856 on the Reader Service Card.

■ ■ ■

Portable tape recorder

A low-cost, portable tape recorder, weighing less than 25 pounds, has been introduced by the Radio Cor-

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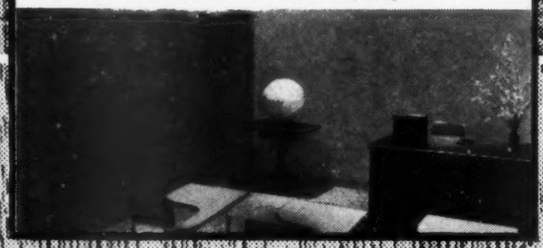

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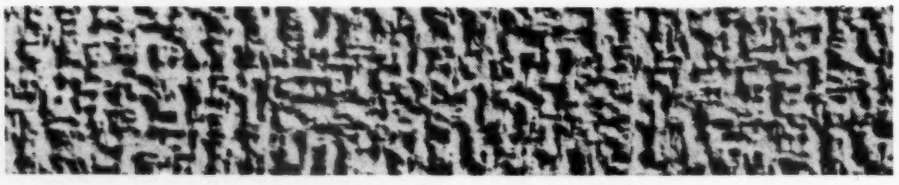

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Eighteen Dictabelts provide all the practice materials you need. One is on radio and TV: the others are on a variety of professions and industries such as law, medicine, advertising, publishing and government.

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poration of America. Measuring 8½ by 14½ by 16 inches, the recorder provides a choice of three speeds—7½, 3¾ and 1⅞ inches per second. The tape head records on only one-half of the tape width. A second recording can be made by turning the reel over to bring the previously unused strip into play. Two speakers are built into the case which also contains an output jack for connection of an external speaker, if desired. The simple controls include record, fast forward, rewind, stop and speed selector. A footage counter is also included.

For more information, circle number 851 on the Reader Service Card.

Table-chair units

Stationary tables featuring attached swivel chairs or stools have been developed by Sico Mfg. Co. The units are designed to eliminate obstructions to comfortable seating and to provide efficient utilization of floor area.

Eight children or adults can be seated at the new six-foot table. It is offered with fiberglass or birch plywood chairs which are individually supported and set to one side to provide leg freedom. Molded stools are also available. The 14-gauge structural steel frame is welded for one-piece rigidity and plated to resist rust. The table tops are constructed of bonded plastic particle board.

For more information, circle number 871 on the Reader Service Card.

■ ■ ■

Push-button teacher

A multiple choice teaching machine, designed with 24 push buttons for answering questions, is available from Smith-Harrison, Inc. Problems are presented on a workbook that rests on top of the machine between two

rows of buttons. The student indicates his answer to the questions in the booklet by depressing the button adjacent to his selected response. Correctness of response is verified immediately by a buzzer. Program material includes reading comprehension, mathematics, geography and biology.

For more information, circle number 892 on the Reader Service Card.

■ ■ ■

Sunscreen reduces heat

A new technique for protecting schools from the sun's heat and glare has just been announced by the Reflectal Corp. Called KoolShade, it is a miniature venetian blind made of tiny horizontal louvers permanently fixed at the optimum angle to keep out the sun's rays all day. It reflects more than 85% of the sun's glare and reduces interior temperatures by as much as 15 degrees on sunny days.

For more information, circle number 888 on the Reader Service Card.

■ ■ ■

Portable schoolrooms

Panelfab Products Inc. have introduced portable aluminum classrooms to meet problems of expansion. Built

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of lightweight aluminum panels, the buildings can be constructed in two or three days.

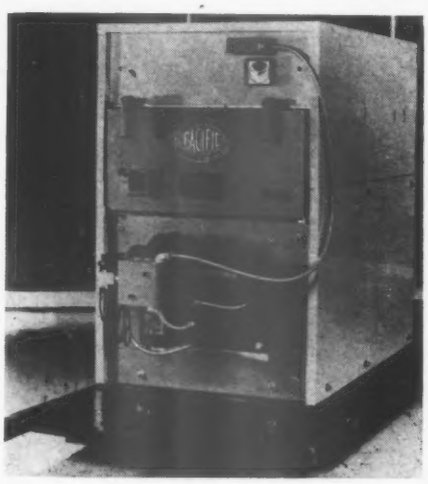
The 700-foot interior is acoustically equipped for class discussions and lectures. The panels interlock to form a weather seal and are fully insulated. The structures are noncombustible, and impervious to rot, rust and vermin. They can be moved as a unit when mounted on wood or steel foundations and are easily dismantled.

For more information, circle number 872 on the Reader Service Card.

■ ■ ■

Baseless boiler

A series of factory assembled baseless boilers has been introduced by Crane Co. The units are available in seven sizes and feature oil, gas, or com-



bination oil-gas forced draft firing. Designed with a skid-type base, they include factory wiring and a full line of safety controls. Optional controls and equipment are available with the units.

For more information, circle number 882 on the Reader Service Card.

■ ■ ■

Double width scaffold

A greater work platform area is featured in the six-foot scaffold introduced by Baker-Roos, Inc. The unit has welded end frames which hold a built-in ladder for access to the platform area. A stairway is offered as optional equipment. Heights greater than six feet can be reached by stacking units and using supplemental stabilizing equipment.

For more information, circle number 859 on the Reader Service Card.

■ ■ ■

Paperback literature units

Complete classroom literature units, each comprising 120 paperback books and each built around a single theme, have been introduced by Scholastic Book Services. Each unit consists of 22 selected titles covering a wide range of varied materials to meet individual differences within a class. Designed for grades seven, eight, nine and ten, the literature units make class-wide instruction possible, as well as small group work and individual enrichment reading. A key feature of the publishing program is the low cost of the units, since all the books contained in them are inexpensive paperbacks.

The first unit issued, dealing with the theme of Courage, is a five- to six-week eighth grade literature unit. It contains 40 copies of a specially prepared anthology of short stories, poems and articles on the subject of courage. Also included are 40 copies of six different novels of varying de-

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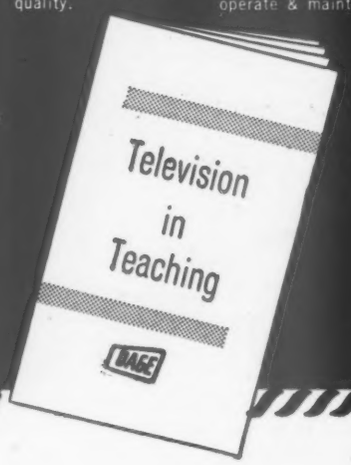

Dage experience in educational TV, available through TRW's Educational Electronics Division, brings you many benefits beyond equipment planning and installation.

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grees of reading difficulty, as well as 40 copies of a selection of fiction and non-fiction designed for individual reading needs. Included with the unit is a loose-leaf bound teacher's notebook, reading and vocabulary tests, synopses of all books in the unit and many suggestions for written exercises.

For more information, circle number 846 on the Reader Service Card.

■ ■ ■

Briefcase recorder

A self-powered miniature recorder-transcriber is available from Miles Reproducer Co., Inc. The unit is designed for conference use and on-the-spot recordings.

Power is supplied by self-contained standard dry batteries, costing 1¢ per hour to operate. Recordings are made on nonflammable, safety-film belts which hold up to four hours of recording on each side. They are permanent, nonmagnetic and nonerasable and indexed for filing or mailing. An optional sound-screener adapts the recorder for dictating in noise. The device excludes everything except a voice spoken or whispered close to the mike. Start-stop provisions afford automatic recording by voice activation. This eliminates recording of silent periods.

An indexed groove-finder locates proper grooves for playbacks or adding recordings without rewinding. Subsequent recordings may be started accurately where the last recording ended.

Other features include a loud speaker and high fidelity jack; volume, tone and speed controls; and foot control pedals for transcribing.

For more information, circle number 884 on the Reader Service Card.

■ ■ ■

Silver dispenser

A portable carrier has been developed by the Caddy Corp. for storing and dispensing cafeteria silverware. The unit accommodates 120 pieces in its eight removable compartments. Silver is deposited in two four-section trays measuring 31-inches long and 20-inches wide by 31-inches high. Loaded in the dishwashing room, the cutlery station can be wheeled directly to the dining area and used to distribute silver in cafeteria lines or as a waiter's service station.

For more information, circle number 889 on the Reader Service Card.

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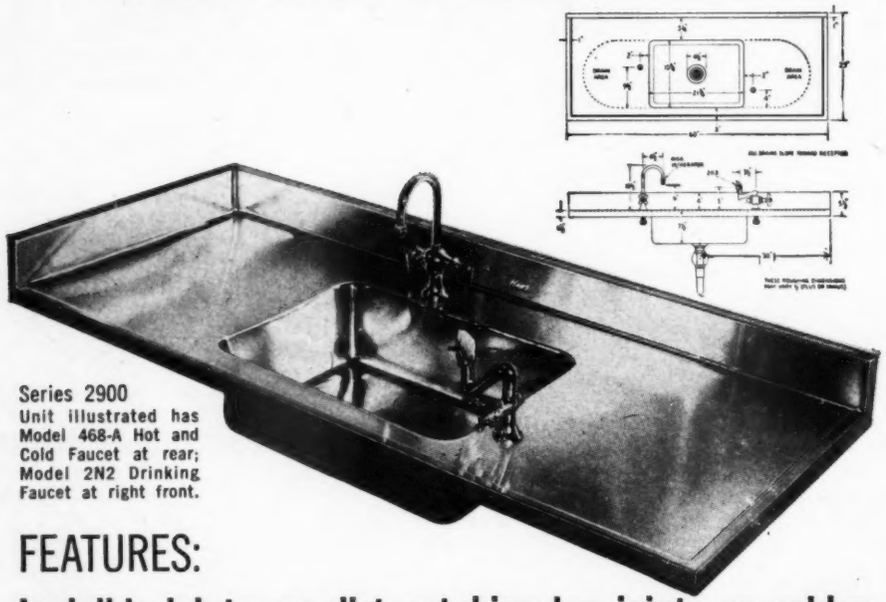

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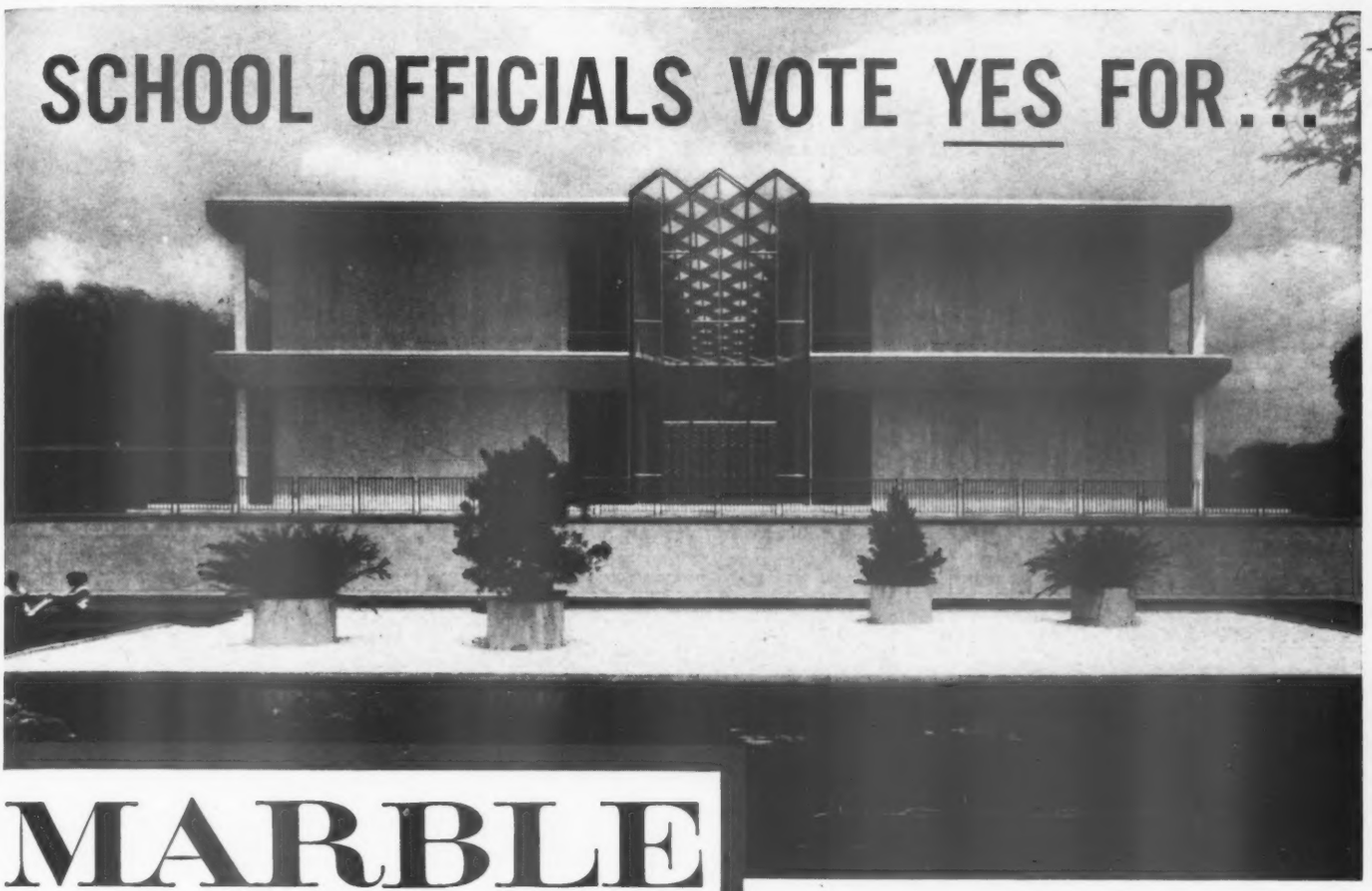
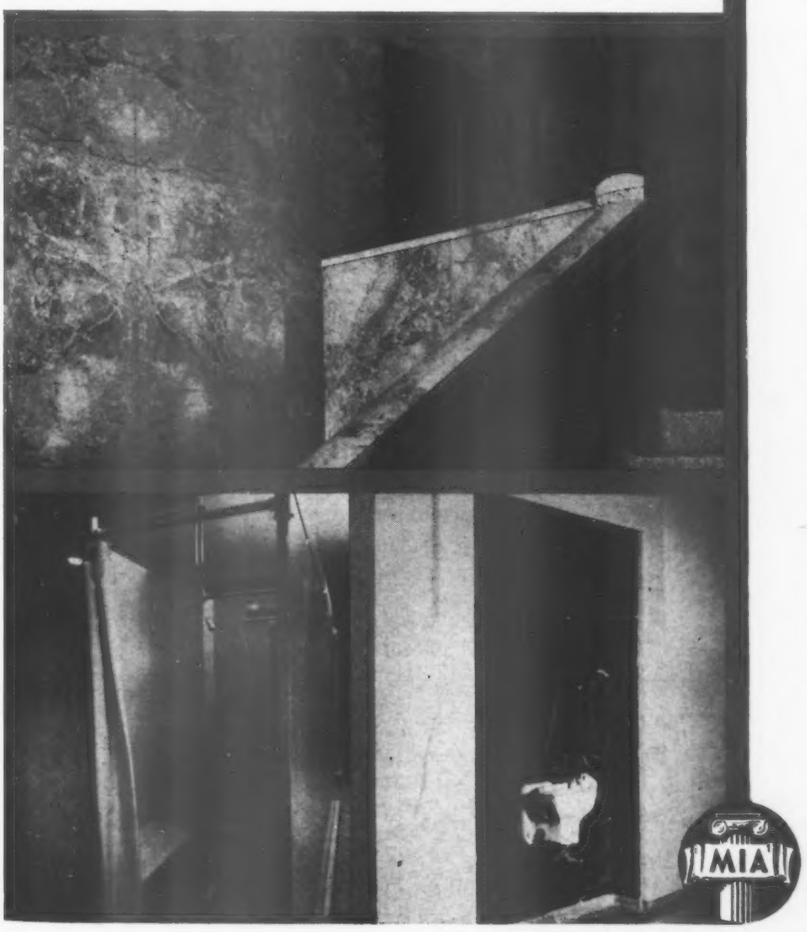


MARBLE IN SCHOOL BUILDINGS



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An Executive Director of residence halls in Bloomington, Ind.

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A City Schools Building Engineer in Salt Lake City, Utah

"We wish more marble had been used, because it's so easy to maintain."
School Principal in Carthage, Missouri

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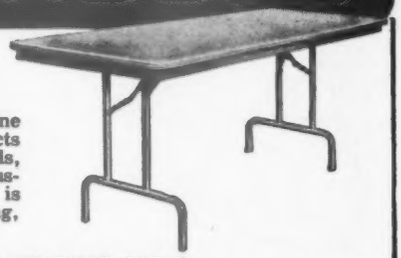

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● For school bus operation in cold climates, get the new South Wind School Bus Heater. This auxiliary heater, connected into the existing heating system, automatically maintains the engine coolant temperature between 155° and 180° F.

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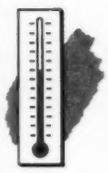

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Simple operation . . . just turn on the ignition and heater switch

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Your Position .....

Address .....

City ..... Zone ..... State .....

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☐ 3,000-6,000; ☐ 6,000-12,000; ☐ 12,000-25,000; ☐ OVER 25,000

☐ Send School Management for one year at $8.00
☐ Bill me ☐ Bill my district

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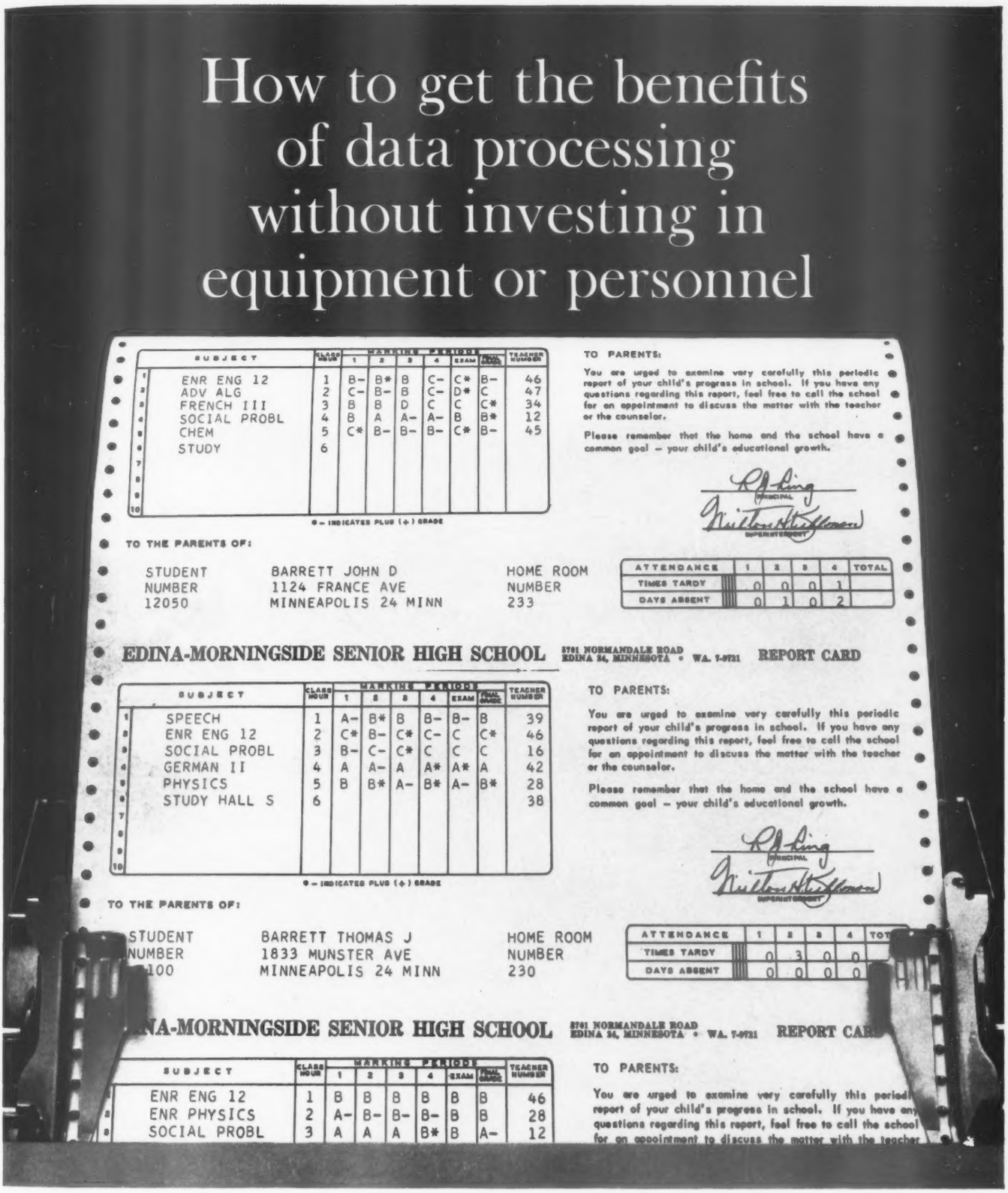

	SUBJECT	CLASS HOUR	MARKING PERIODS 1	2	3	4	EXAM	FINAL GRADE	TEACHER NUMBER
1	ENR ENG 12	1	B-	B*	B	C-	C*	B-	46
2	ADV ALG	2	C-	B-	B	C-	D*	C	47
3	FRENCH III	3	B	B	D	C	C	C*	34
4	SOCIAL PROBL	4	B	A	A-	A-	B	B*	12
5	CHEM	5	C*	B-	B-	B-	C*	B-	45
6	STUDY	6							
7									
8									
9									
10									

* – INDICATES PLUS (+) GRADE

TO PARENTS:

You are urged to examine very carefully this periodic report of your child's progress in school. If you have any questions regarding this report, feel free to call the school for an appointment to discuss the matter with the teacher or the counselor.

Please remember that the home and the school have a common goal – your child's educational growth.

PRINCIPAL

SUPERINTENDENT

TO THE PARENTS OF:

STUDENT NUMBER 12050

BARRETT JOHN D
1124 FRANCE AVE
MINNEAPOLIS 24 MINN

HOME ROOM NUMBER 233

ATTENDANCE	1	2	3	4	TOTAL
TIMES TARDY	0	0	0	1	
DAYS ABSENT	0	1	0	2	

EDINA-MORNINGSIDE SENIOR HIGH SCHOOL 5701 NORMANDALE ROAD EDINA 24, MINNESOTA • WA. 7-9721 **REPORT CARD**

	SUBJECT	CLASS HOUR	MARKING PERIODS 1	2	3	4	EXAM	FINAL GRADE	TEACHER NUMBER
1	SPEECH	1	A-	B*	B	B-	B-	B	39
2	ENR ENG 12	2	C*	B-	C*	C-	C	C*	46
3	SOCIAL PROBL	3	B-	C-	C*	C	C	C	16
4	GERMAN II	4	A	A-	A	A*	A*	A	42
5	PHYSICS	5	B	B*	A-	B*	A-	B*	28
6	STUDY HALL S	6							38
7									
8									
9									
10									

* – INDICATES PLUS (+) GRADE

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Please remember that the home and the school have a common goal – your child's educational growth.

PRINCIPAL

SUPERINTENDENT

TO THE PARENTS OF:

STUDENT NUMBER 100

BARRETT THOMAS J
1833 MUNSTER AVE
MINNEAPOLIS 24 MINN

HOME ROOM NUMBER 230

ATTENDANCE	1	2	3	4	TOT
TIMES TARDY	0	3	0	0	
DAYS ABSENT	0	0	0	0	

NA-MORNINGSIDE SENIOR HIGH SCHOOL 5701 NORMANDALE ROAD EDINA 24, MINNESOTA • WA. 7-9721 **REPORT CAR**

	SUBJECT	CLASS HOUR	MARKING PERIODS 1	2	3	4	EXAM	FINAL GRADE	TEACHER NUMBER
1	ENR ENG 12	1	B	B	B	B	B	B	46
2	ENR PHYSICS	2	A-	B-	B-	B-	B	B	28
3	SOCIAL PROBL	3	A	A	A	B*	B	A-	12

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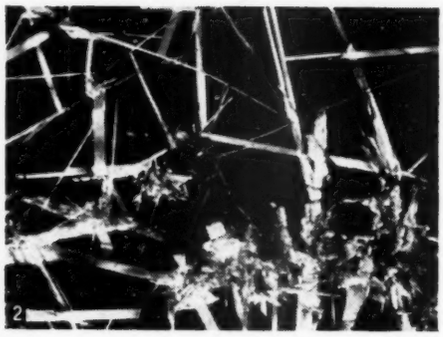

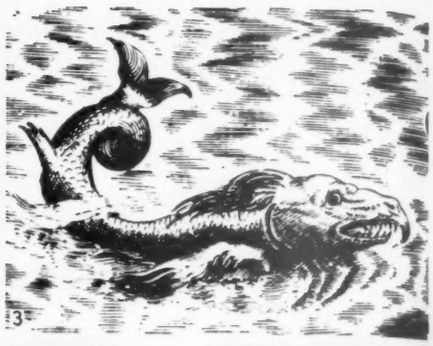

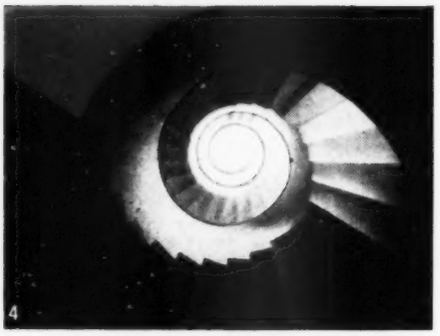

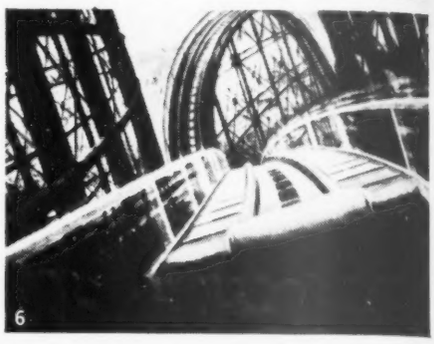

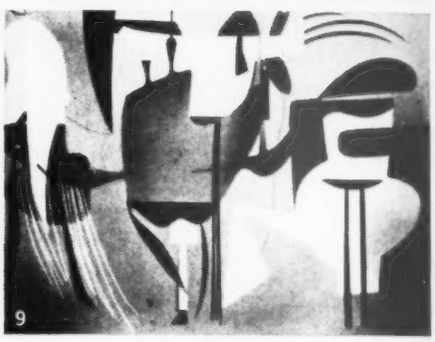

ARABICK.

آلسّلاَمُ لكَ يامَرْيَمُ آلمُسَلّيَةُ مِنَ آلبَعْلِ آلرَّبّ

مَعَكِ مُبارَكَةٌ أنْتِ فِي آلنِّسآءِ وَمُبارَكَةٌ

مَمَرُ بَطْنِكِ يَسُوعُ *

ا, ب, ت, ث, ج, ح, خ, د, ذ, ر, ز, س

ش, ص, ض, ط, ظ, ع, غ, ف, ق, ك,

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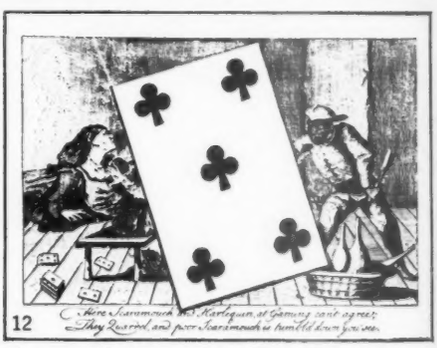

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